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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 226

[Docket No. 100217099-5999-03]

RIN 0648-AY54

Endangered and Threatened Species; Critical Habitat for Endangered North Atlantic Right Whale

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule.

SUMMARY: We (NMFS) are issuing this final rule to replace the critical habitat for right whales in the North Atlantic with two new areas. The areas being designated as critical habitat contain approximately 29,763 nm² of marine habitat in the Gulf of Maine and Georges Bank region (Unit 1) and off the Southeast U.S. coast (Unit 2). We have considered positive and negative economic, national security, and other relevant impacts of the critical habitat. We are not excluding any particular area from the final critical habitat.

A Biological Source Document provides the basis for our identification of the physical and biological features essential to the conservation of the species that may require special management considerations or protection. A report was also prepared pursuant to section 4(b)(2) of the Endangered Species Act (ESA) in support of this rule.

DATES: This rule is effective [*insert date 30 days after date of publication in the FEDERAL REGISTER*].

ADDRESSES: The final rule as well as comments and information received, and accompanying documents are available at www.greateratlantic.fisheries.noaa.gov or by contacting Mark Minton, NMFS, Greater Atlantic Regional Fisheries Office (GARFO) 55 Great Republic Drive, Gloucester, MA 01930.

FOR FURTHER INFORMATION CONTACT: Mark Minton, NMFS, Greater Atlantic Regional Fisheries Office (GARFO), 978-282-8484, Mark.Minton@noaa.gov; Barb Zoodsma, NMFS, Southeast Regional Office, 904-321-2806, Barb.Zoodsma@noaa.gov; Lisa Manning, NMFS, Office of Protected Resources, 301-427-8466, Lisa.Manning@noaa.gov.

SUPPLEMENTARY INFORMATION:

The Biological Source Document (NMFS 2015a) and ESA Section 4(b)(2) Report (NMFS 2015b) are available on our Web site at www.greateratlantic.fisheries.noaa.gov, on the Federal eRulemaking Web site at www.regulations.gov, or upon request (see **ADDRESSES**).

Background

In 1970, right whales, *Eubalaena* spp. were listed as endangered (35 FR 18319, December 2, 1970). At that time, we considered the northern right whale species (*Eubalaena glacialis*) to consist of two populations--one occurring in the North Atlantic Ocean and the other in the North Pacific Ocean. In 1994, we designated critical habitat for the northern right whale population in the North Atlantic Ocean (59 FR 28805, June 3, 1994). This critical habitat designation included portions of Cape Cod Bay and Stellwagen Bank, the Great South Channel (each off the coast of Massachusetts), and waters adjacent to the coasts of Georgia and the east coast of Florida. These areas were determined to provide critical feeding, nursery, and calving habitat for the North Atlantic population of northern right whales. This critical habitat was

revised in 2006 to include two foraging areas in the North Pacific Ocean— one in the Bering Sea and one in the Gulf of Alaska (71 FR 38277, July 6, 2006).

In 2006, we published a comprehensive right whale status review, which concluded that recent genetic data provided unequivocal support to distinguish three right whale lineages as separate phylogenetic species (Rosenbaum *et al.* 2000). They are: (1) The North Atlantic right whale (*Eubalaena glacialis*) ranging in the North Atlantic Ocean, (2) The North Pacific right whale (*Eubalaena japonica*), ranging in the North Pacific Ocean, and (3) The southern right whale (*Eubalaena australis*), historically ranging throughout the southern hemisphere's oceans. Based on these findings, we published proposed and final determinations listing right whales in the North Atlantic, North Pacific, and southern hemisphere as separate endangered species under the ESA (71 FR 77704, December 27, 2006; 73 FR 12024, March 6, 2008). In April 2008, a final critical habitat designation was published for the North Pacific right whale (73 FR 19000, April 8, 2008).

On October 1, 2009, we received a petition to revise the 1994 critical habitat designation for right whales in the North Atlantic. In response, pursuant to section 4(b)(3)(D), we published a combined 90-day finding and 12-month determination on October 6, 2010 (75 FR 61690), that the petition presented substantial scientific information indicating that the requested revision may be warranted, and that we intended to issue a proposed rule to revise critical habitat for the North Atlantic right whale. As noted in that finding, the biological basis and analysis for the 1994 critical habitat designation were based on the North Atlantic population of right whales, so that designation continued to apply to North Atlantic right whales after they were listed as a separate species in 2008. On February 20, 2015 (80 FR 9314), we proposed replacing the 1994 critical habitat designation for the population of right whales in the North Atlantic Ocean with

two new areas of critical habitat for the North Atlantic right whale.

In the proposed rule we requested public comment through April 21, 2015. For a complete description of our proposed action, including the natural history of the North Atlantic right whale, please see the proposed rule (80 FR 9314, February 20, 2015).

We are making one change from the proposed rule to the areas designated as right whale critical habitat. The one change is based on public comments received and further review of the best available scientific data. We are extending Unit 2 further to the south to include an area that is a portion of the 1994-designated critical habitat, increasing Unit 2 by approximately 341 nm². Unit 2 now includes nearshore and offshore waters of the southeastern U.S., extending from Cape Fear, North Carolina south to approximately 27 nm below Cape Canaveral, Florida.

Summary of Comments and Responses

We received 261 letters and general comments on the proposed rule and supporting analyses via Regulations.gov, letter, fax, and email. In addition, 20,826 form letters were also received via letter and email. We received 20,325 form letters from an environmental advocacy group stating their general support for the proposed designation of critical habitat and urging NMFS to include a migratory corridor in the final designation. We received an additional 500 form letters from a second environmental advocacy group as well as 210 (additional) form letters that contained slight variations to the main form letter. We also received two petitions from environmental advocacy groups with approximately 17,420 and 2,069 signatures, respectively stating general support for designating critical habitat and urging the inclusion of a migratory corridor.

Many comments urged imposing restrictions on Navy activities as well as oil and gas exploration and development, expanding existing fishing gear restrictions, and expanding

seasonal management areas (SMAs) to reduce the risk to right whales due to ship strikes and vessel speeds as part of this rulemaking; however, these issues are not within the scope of this critical habitat rulemaking.

Unit 1 Boundaries

Comment 1: One commenter stated that in proposing to designate Unit 1, we mistakenly proposed to designate a large area in which right whales congregate, rather than identifying the “specific areas” on which essential foraging features “are found.” As a result, the proposed Unit 1 designation is overbroad and should be more narrowly tailored, consistent with the ESA. The comment states that the proposed boundaries of Unit 1 are not based upon the established presence of the essential features.

Response: We disagree with this comment. The proposed boundaries of Unit 1 encompass the combination of physical and biological features of foraging habitat that are essential to right whale conservation and that may require special management considerations or protection. We did not simply propose to designate the area depicted as Unit 1 based on where “right whales congregate” as the comment suggests. As discussed in detail in the Biological Source Document, the seasonal distributions and general patterns of abundance of *C. finmarchicus* within the Gulf of Maine and Cape Cod Bay have been documented. The geographic scales and depths at which copepods are sampled only rarely match the fine-scale at which right whales forage (Mayo and Marx 1990, Baumgartner and Mate 2003). Basin-scale zooplankton monitoring schemes have proved ineffective in detecting the high concentrations usually present in the vicinity of actively feeding whales. Furthermore, using direct copepod sampling efforts to identify where dense aggregations occur would be unproductive because sufficient data are not available to establish a specific threshold density of *C. finmarchicus* that triggers feeding. For these reasons, the specific area on which are found dense aggregations of

late stage *C. finmarchicus* cannot be defined by relying on data from such efforts to sample copepod aggregations directly throughout the vast Gulf of Maine and Georges Bank region. Instead, we used an alternative “whale centric” approach for detecting dense prey patches. The location of actively foraging right whales provides a proxy for the distribution of dense copepod patches (Marx and Mayo 1990, Wishner *et al.* 1995, Pace and Merrick 2008). We used the protocol for determining the whale density and residency indicative of feeding behavior developed by Clapham and Pace (2001) for the Dynamic Area Management (DAM) program to determine where the dense patches of *C. finmarchicus* are found. The boundaries of Unit 1 are not solely based on the presence of the dense *C. finmarchicus* patches, as determined by the foraging right whale proxy, but also by the presence of the physical oceanographic features and the biological feature of diapausing copepods identified in this rulemaking (see responses to comment 36 and 49).

Comment 2: The State of Maine Department of Marine Resources stated that it disagreed with the use of the current exemption line identified in the Atlantic Large Whale Take Reduction Plan (ALWTRP, 50 CFR 229.32) as the inshore boundary of the proposed critical habitat. It suggested that NMFS should use the 100 meter isobath contour as the near shore boundary to better align with the biological and physical features identified as supporting the aggregation and distribution of copepods. This commenter stated that the proposed boundary (the exemption line) does not have any bearing on the biological and physical oceanographic features that have been identified as drivers for copepod production, distribution, aggregation, and retention in the Gulf of Maine, nor is there a biological justification for using the exemption line as the inshore boundary given the location of right whale sightings. The commenter noted that the agency analyzed 35 years of DAM-qualified sightings but identified only one aggregation of right

whales near the coast of Maine (Pace and Merrick 2008). They noted that all other identified aggregations occurred beyond the 100 meter contour, which is well seaward of the ALWTRP's exemption line. The commenter also cited a study completed by Runge *et al.* (2010) who found that densities of late stage copepods were statistically significantly higher at offshore stations (>100 m) than inshore area and that copepods were not aggregating in water depths less than 100 meters. The commenter also stated that this finding was consistent with the statement in Runge *et al.* (2010) that the Maine Coastal Current centers at the 100 m contour.

Response: After review of this comment and the study cited, we conclude that the use of the ALWTRP Exemption line remains appropriate as the inshore boundary of the area on which the essential foraging features of right whale critical habitat are found.

The study provided by the commenter in support of the requested change was somewhat limited both spatially and temporally. The study of copepod densities cited was based on the sampling that was conducted over a three-year period with sampling occurring only during the months of July and August. Also, there is uncertainty as to what exact density of copepods triggers feeding, with the density seeming to vary both temporally and spatially.

Asaro (2012) depicts an overlay of the DAMs and Dynamic Management Areas (DMAs) in the western Gulf of Maine. The inshore extent of the plots of these events in the western Gulf of Maine closely approximates the Maine exemption line. While there are several instances of buffered DAMs and DMAs extending into Maine inshore waters, the sightings themselves were not located in these waters (Asaro 2012). This analysis does provide some evidence of right whale foraging activities in areas seaward and adjacent to the Maine exemption line. As we tried to explain in the proposed rule and its supporting documents and clarify now, the essential biological feature of dense patches of copepods is present in areas seaward and adjacent to the

Maine exemption line. Therefore, the Maine exemption line does have bearing on the presence of this biological feature and is a reasonable approximation of the shoreward boundary of critical habitat in Unit 1.

In addition, the decision to retain the Maine Exemption line, as proposed, for the inshore boundary of right whale critical habitat is based on the presence of one of the physical oceanographic features identified as being essential to the conservation of the species - specifically, the oceanographic conditions and structures of the Gulf of Maine and Georges Bank region that combine to distribute and aggregate copepods for right whale foraging, namely prevailing currents and circulation patterns. The Maine Coastal Current (MCC) is one of the major oceanographic features in the western Gulf of Maine that is essential to the conservation of North Atlantic right whales because of its role in aggregating and distributing copepods. The MCC has two major components, the Eastern Maine Coastal Current (EMCC) off Maine's northeast coastline and the Western Maine Coastal Current (WMCC) off the coastlines of southern Maine, New Hampshire, and Massachusetts. Manning *et al.* (2009) report that the MMC is centered from approximately the 71 m isobath inshore to the 117 m isobath seaward. Churchill *et al.* (2005) report that the EMMC is 20 km wide, with its shoreward extent at about 10 km from shore. Manning *et al.* (2009) report that on average, the core of the WMCC is centered at the depth of 67 m. As these studies document, the center of both of the two major components of the MMC are shoreward of the 100 m isobath proposed by the commenter as the inshore boundary of critical habitat. Although the MMC coastal current is highly variable, the ALWTRP exemption line generally follows the 50 meter isobath and is also the approximate inshore boundary of the MMC. Further, as the depths reported represent the core of the two

MMC currents; both the EMCC and the WMCC are present further inshore. The MMC is very dynamic with interannual variability due to such factors as wind and water temperature.

Based on our review of the proposed use of the 100 m isobaths as the inshore boundary of critical habitat instead of the Maine exemption line, we conclude that the Maine exemption line corresponds more closely to the inshore extent of the essential physical oceanographic feature that is the MCC.

Comment 3: Several fishing industry comments supported the designation of additional right whale critical habitat that is essential to the conservation and recovery of the North Atlantic right whale. However, they opposed the designation area as proposed. The commenters agreed with Maine Department of Marine Resources' (DMR) review of the scientific literature on the physical oceanographic conditions and structures of the Gulf of Maine as well as foraging aggregations. They strongly supported DMR's recommendation that the shoreward boundary of the proposed Gulf of Maine critical habitat (Unit 1) follow the 100m contour and not the Maine exemption line defined in the Atlantic Large Whale Take Reduction Plan. The commenters stated that Maine's exemption line has no direct bearing on the four physical and biological features identified by us as being essential to defining this critical habitat. They stated that in the absence of this adjustment, they would oppose the change in the Gulf of Maine current critical habitat designation.

Response: See response to Comment 2.

Comment 4: One commenter requested the expansion of critical habitat in the Northeast to include all waters in the Gulf of Maine and Georges Bank from the Hague Line to the shoreline based on the best available science indicating that the area contains physical and biological features essential for the survival of the species. The commenter sought to extend the

critical habitat boundary to the shoreline in Maine beyond the Maine Exemption line. The commenter questioned the agency's determination that the essential physical and biological foraging features are not found inshore of the Maine exemption line. The commenter cited several factors in support of the expansion of the critical habitat boundary to the shoreline. The factors cited by the commenter include: (1) limited systematic sightings effort inside the ALWTRP Maine exemption line as well as a recent analysis by Industrial Economics, Inc., evaluating the co-occurrence of whales and vertical lines used in commercial fisheries in the northeast shows large areas in inshore Maine, indicating that there was no survey effort in large segments of the inshore area; (2) the NMFS program of dynamic management; currently for ship traffic, but formerly for fishing gear as well, has resulted in the imposition of dynamic management measures in inshore Maine waters; and (3) the results of a satellite telemetry study that was done targeting right whales in the northeast. The commenter stated that in that study at least 2 of the 14 tagged right whales (approximately 14%) showed tracks that appear to be within the areas of coastal Maine that were not included in the proposed Unit 1 critical habitat.

Response: As discussed in our response to Comment 2, we used foraging right whales as a proxy for identifying areas where the essential feature of dense aggregations of late-stage copepods are found. As part of that process, we analyzed 35 years of DAM-qualified sightings and identified only one aggregation of foraging right whales near the coast of Maine inshore of the Maine exemption line (see response to Comment 15 for additional discussion). This analysis provides strong support for our determination that late stage copepods in quantities sufficient to trigger right whale foraging are not present inshore of the Maine exemption line. While the commenter is correct that some areas have been surveyed more extensively than others within the Gulf of Maine and Georges Bank region, we are required to use the best available data. With

regard to the results of the telemetry studies cited by the commenter (Baumgartner and Mate 2005), the telemetry data were included in the 35 years of DAM-qualified sightings data we analyzed. The two right whales referenced by the commenter did not trigger a DAM qualified sighting (aggregations of three or more feeding right whales in a specified area), indicating the whales were not foraging and were spatially and/or temporally separate from each other while in the inshore waters. As such, these data do not indicate that one or more of the essential physical and biological features were present.

Comment 5: One commenter stated that the regular imposition of multiple dynamic management measures that extended into the inshore waters of Maine in a number of instances casts doubt on the conclusion that whales are unlikely to use the inshore area with any regularity.

Response: We disagree. As stated in our response to Comment 2, Asaro (2012) depicts an overlay of the DAMs and Dynamic Management Areas (DMAs) in the western Gulf of Maine. The inshore extent of the plots of these events in the western Gulf of Maine closely approximates the Maine exemption line. While there are several instances of buffered DAM and DMAs areas extending into Maine inshore waters, the sightings themselves were not located in these waters, just the buffer zone(s) associated with the DAM(s) and DMA(s) (Asaro 2012). This analysis does provide some evidence of right whale foraging activities in areas seaward and adjacent to the Maine exemption line and thus, provides support for its use as the shoreward boundary of critical habitat in Unit 1.

Comment 6: A commenter stated that regardless of right whale sightings, the inshore waters of Maine contribute to the circulation patterns of the Gulf of Maine, which support and concentrate *C. finmarchicus*—the primary forage of North Atlantic right whales. The commenter stated that, according to NMFS, “freshwater inflow from numerous rivers (*e.g.*, the

St. John, Penobscot, Kennebec, Androscoggin, and Merrimac Rivers) within the Gulf of Maine watershed contributes to the density driven circulation pattern.” The commenter asserts that therefore the inshore waters of Maine contain the physical and biological features necessary to maintain food resources for right whales, and that area is therefore essential to the survival of the species. The commenter stated that because the currents in the Gulf of Maine are strongly influenced by density gradients between the high-salinity slope water entering from the Atlantic and fresher waters, which form in the Gulf of Maine or enter from the Scotian Shelf, the freshwater inflow from these and other rivers within the Gulf of Maine watershed that contributes to the density driven circulation pattern must be adequately protected. The commenter further stated that the bays and inlets into which these rivers flow may require special management to ensure that this flow is not impeded by development such as hydroelectric or hydrokinetic projects designed to provide alternative energy to the region.

Response: The physical features in question here are the physical oceanographic conditions and structures that combine to distribute and aggregate copepods in sufficient densities to support right whale foraging and energetic requirements. We agree that freshwater inflow from numerous rivers (including the St. John, Penobscot, Kennebec, Androscoggin, and Merrimac Rivers) are one of several external environmental processes within the Gulf of Maine watershed that may influence the density driven circulation pattern. However, these influences are not physical oceanographic features. Rather they simply have the potential to influence the identified oceanographic features. The physical oceanographic features of the Gulf of Maine Georges Bank region are influenced by a variety of conditions including several outside of the Gulf of Maine. For example, the North Atlantic Oscillation (NAO) (a climatic phenomenon in the North Atlantic Ocean of fluctuations in the difference of atmospheric pressure at sea-level

between the Icelandic low and the Azores high) influences the relative location within the Atlantic Ocean of warm Gulf Stream waters that approach the Gulf of Maine from the south, and the colder Labrador Current waters that flow toward the area from the north. Small-scale changes in the North Atlantic can produce large-scale changes in the Gulf of Maine. There are large-scale coastal circulation patterns that influence the Gulf of Maine that originate from the Labrador Sea. The circulation and water properties within the Gulf of Maine therefore may depend as much on influences originating over 1,000 km away as on local processes (Thompson 2010).

In addition, there are other local environmental processes that influence the physical oceanographic conditions inside the Gulf of Maine including such factors as wind, tidal mixing, the periodic cooler and more fresh inflow from the Scotian Shelf, winter cooling, summer heating, the deep warmer and more saline inflow of the slope water, and river runoff including from those identified by the commenter (Xue *et al.* 2000, Thompson 2010).

Further, the information cited by the commenter regarding freshwater input into the Gulf of Maine is taken out of context and relates to the “may require special management considerations or protection” analysis we conducted to determine if the areas containing the physical oceanographic conditions and structures met the definition of critical habitat. Consequently, we did not identify the external freshwater input associated with river inflow from the various sources, including rivers within the Gulf of Maine watershed, as part of the physical feature. We have updated the Biological Source Document accordingly to clarify this issue.

Unit 2 Boundaries

Comment 7: A number of comments were received concerning the location of the southern boundary of the proposed revised calving area critical habitat. Comments requested to

(1) move the proposed revised boundary southward (commenter did not specify how far south), (2) keep the southern boundary for the proposed revised critical habitat the same as current critical habitat designated in 1994, and (3) move the proposed revised boundary south of the current critical habitat designated in 1994. One commenter was concerned that the proposed Unit 2 would exclude Port Canaveral and noted one mother-calf pair was observed in the Canaveral ship channel while cruise ships were departing the port. Commenters supported a more southerly boundary because: (1) sightings of mother/calf pairs (available at <http://www.nefsc.noaa.gov/psb/surveys/>) reported since Good's analysis indicate that waters south of proposed Unit 2 are used consistently – including by mother-calf pairs, (2) the agency previously recognized the area as critical to calving right whales, (3) calves are observed in the area so the areas should be protected even though they are not part of the area selected by the habitat models, (4) Good's model (available at: <http://dukespace.lib.duke.edu/dspace/handle/10161/588>) predicts calving habitat in the area for at least part of the calving season, and (5) right whales utilize the area at above-average densities.

Response: We agree with the commenters and have modified the southern boundary of Unit 2. We originally considered an alternative retaining the southern portion of the 1994 designated calving area critical habitat, discussed in the consideration of alternatives for the Initial Regulatory Flexibility Analysis (see Appendix B in the draft ESA Section 4(b)(2) Report). We noted that retaining the southern boundary as designated in 1994 would have captured suitable habitat predicted by Good's (2008) combined model for one month. However, in that analysis we noted that Garrison's (2007) habitat model did not predict suitable calving habitat that far south, yet it captured 91% of observed mother-calf pairs.

In response to public comments, we investigated observations of mother-calf pairs collected subsequent to the data used in the cited models and re-examined Garrison (2007), Good (2008), and Keller *et al.* (2006). We reviewed the North Atlantic Right Whale Consortium Database (2015) (available at <http://www.narwc.org/index.php?mc=8&p=28>) for mother-calf pair sightings south of the proposed Unit 2 and from the 2001-2002 calving season to present. We used this timeframe because Garrison (2007) and Keller *et al.* (2006) used Consortium data through March 2001. We found 39 mother-calf pair sightings at an annual sighting rate of just under three mother-calf pairs (highest annual number of pair sightings was 10). Of these, January and February sightings were most prevalent and totaled 12 and 19, respectively. While the number of sightings varies among years, sightings of mother-calf pairs within that area are predictable and consistent, as noted by some of the commenters. Because occupied critical habitat must be based on the presence of features essential to the species' conservation that may require special management considerations or protection, we re-evaluated the predictive habitat model results in terms of temporal distribution of the essential depth, temperature, and sea surface roughness features. First, we reviewed the models and temporal scales of model outputs. Garrison's (2007) and Keller *et al.*'s (2006) models at the 4-month (season-level) temporal resolution (as illustrated in Garrison's Figure 19 and Keller *et al.*'s Figure 7), which were used for the proposed designation, do not predict presence of all the essential features south of the proposed boundary. This is because the 4-month scale obscured the areas containing the essential features for a smaller timeframe (*i.e.*, one month). Garrison's (2007) model output at a finer temporal resolution (monthly scale) does predict presence of the essential features south of the proposed revised critical habitat for at least a portion of the calving season (in January and February) (see Garrison's Figure 21 and 22). Good's (2008) model outputs are similar. The

presence of all the essential features are not predicted to simultaneously co-occur south of the proposed unit boundary for the coarser temporal scale of 3 or 4 months, but the essential features are expected to simultaneously co-occur over a contiguous area in the finer, 1-month temporal scale. Good's model also predicts presence of the essential features south of the proposed revised critical habitat in January and February, and to a lesser degree, in December. Thus, this southern area contains the essential features at times when the majority of the right whale mother-calf pairs have been observed there in the years since the models were published. Mother/calf pairs in the area were most often seen swimming (n=23) but other behaviors were observed (diving -7, breaching-1, and slapping the water with flippers or tails-2) (Right Whale Consortium 2015). The high number of observations of swimming mother/calf pairs in this area is consistent with our analysis, discussed in the Biological Source Document for the Critical Habitat Designation, that mother-calf pairs likely loop many miles up and down the coast in the calving area to strengthen calves' swimming abilities. Apparent nursing was also observed in the area (n=4), and mother-calf pairs were also seen in physical contact with each other (n=9).

Therefore, we believe the available data show consistent and predictable presence of right whale mother-calf pairs in this southern area, during the months the habitat models predict presence of all the essential features. The features here may require special management considerations or protections for the same reasons as the rest of Unit 2: because of possible negative impacts from activities and events of offshore energy development, large-scale offshore aquaculture operations, and global climate change. These activities and their potential broad-scale impacts on the essential features are discussed in detail in the Biological Source Document (NMFS 2015). For these reasons, we agree with the commenters that the southern boundary of the calving area critical habitat should be moved southward from where we proposed. Next, we

identified new coordinates for including this area in Unit 2. Based on the above information and Good's (2008) one-month model, the Southeast Calving Area (Unit 2) boundaries were developed by drawing straight lines around the modelled one-month area extending from Daytona Beach to just south of Melbourne, Florida , trying to use the fewest number of waypoints as possible, and rounding waypoints to the nearest minute to the greatest extent possible. This extension represents an approximate 4% increase in the area of Unit 2 from the proposed rule and retains critical habitat in Atlantic waters adjacent to Port Canaveral.

To evaluate and consider the economic impacts of including this area in the designation, we followed the same methodology described in the proposed rule (80 FR 9314, February 20, 2015) and in the Section 4(b)(2) Report. Similar to the proposed Unit 2 area, we identified three categories of activities that have occurred and are likely to recur in the future and have the potential to affect the essential features in the expanded Unit 2 area: 1) U.S. Army Corps of Engineers (USACE) maintenance dredging or permitting of dredge and disposal activities under the Clean Water Act; 2) USACE permitting of marine construction, including shoreline restoration and artificial reef placement under the Rivers and Harbors Act and/or Clean Water Act; and 3) Bureau of Ocean Energy and Management permitting of sand and gravel extraction under the Outer Continental Shelf Lands Act.

Additionally, we identified one category of activities that has not occurred in the expanded Unit 2 area in the past but, based on available information, may occur in the future. The projected activity is offshore renewable/alternative energy development. If this activity occurs, it may adversely affect the essential features. In the proposed rule (80 FR 9314, February 20, 2015), we described our justification for determining relative levels of impacts (*i.e.*, incremental, or co-extensive) for all of these activities. We repeated that process, to consider the

impacts of adding the southern extension to the designation. Based on our analysis of past consultation history, we project that over the next ten years, there will be 22 consultations, or about two consultations per year, in this area which may affect the features of critical habitat. Eleven of these projects would involve dredging and/or disposal by the U.S. Army Corps of Engineers, and 11 projects would involve permitting of marine construction or artificial reef placement by the U.S. Army Corps of Engineers. Thus, adding the southern extension would involve no additional federal agencies or actions that are different from those that will be conducted in the rest of Unit 2 and were evaluated in the Draft Section 4(b)(2) report. As discussed in the Section 4(b)(2) Report, these activities are only expected to involve incremental administrative costs of consultation as a result of this designation. Annual administrative costs for these projected consultations are \$10,160 (at \$5,080 per consultation –see the Economics Impact section in the proposed rule and the Section 4(b)(2) Report for background information on the costs for conducting consultations).

Relative to projected, new activities, offshore renewable/alternative energy may occur in the southern extension area, given its proximity to shore and available information about where and how these activities might be implemented (<http://www.boem.gov/Florida/>). Because there are no records in NMFS's consultation history for offshore renewable or alternative energy projects occurring within Unit 2, we are unable to a) predict how many section 7 consultations may result from projects of this type over the next 10 years or b) calculate the projected incremental costs resulting from this action. We are not aware of any other future new federal activity that may be implemented in the southern extension area.

We also contacted Department of Defense agencies that are active in the area to determine if they anticipated any impacts from critical habitat designation on their activities

within the additional southern area that would pose national security concerns. Their responses were similar to those submitted for the proposed Unit 2 area in that they did not anticipate their activities would destroy or adversely modify the essential features of calving habitat. Therefore, other than the administrative costs of consultation for about 2 consultations annually over the next 2 years, there will be no economic or national security impacts of this addition. Yet, as the sightings data demonstrate, there appear to be measurable conservation benefits to right whale mother-calf pairs that use this particular area every year.

Finally, we evaluated whether the data suggest the Unit 2 boundaries should be expanded on a similar basis elsewhere. In other words, whether there is consistent mother-calf pair usage of other areas predicted by the habitat suitability models to contain the essential features in one month of the calving season evaluated in the models. Good's (2008) model generally predicts calving habitat in one month (two months in some portions of the area) north of the proposed Unit 2 boundaries, from Cape Fear to approximately Cape Hatteras, North Carolina. Nine mother/calf pair sightings occurred in the approximately 2,386 nm² area from the 2001/2002 calving season to present (Right Whale Consortium, 2015) and at an annual sighting rate of just under one pair (highest number of pair sightings is four in one season). In other words, the area off North Carolina is approximately 600% larger than the area off Florida, yet it has 75% fewer sightings of mother/calf pairs of right whales. Mother-calf pair sightings occurred in three different calving seasons. Two mother calf pairs observed off North Carolina in April 2010 were likely migrating northward as both were observed earlier in the calving season off Florida and Georgia (Right Whale Consortium, 2015a). Since available data do not demonstrate that mother-calf pair usage of the area off North Carolina and north of the proposed Unit 2 boundary is as consistent and predictable as off Florida south of proposed Unit 2 during the peak calving season

(North Atlantic Right Whale Consortium sighting database), we are not expanding the Unit 2 boundaries to the north at this time.

Consequently, at this time we are extending Unit 2 further to the south to include a portion of the 1994-designated critical habitat. We find that this is supported because: (a) Garrison (2007) and Good (2008) confirm the presence of the essential features of critical habitat in the area for at least a portion of the right whale calving season; (b) we confirmed mother-calf pairs were sighted in the area most frequently when the essential features are expected to be in that area, and (c) multiple mother-calf pairs consistently and predictably occur there every year.

Comment 8: One commenter recommended extending calving area critical habitat eastward off Florida to include the location of an observed March 20, 2010, right whale birthing event.

Response: We are not extending the calving area critical habitat boundary farther to the east off South Carolina or Florida. The March 20, 2010, right whale calving event was at least 15 nm east of predicted suitable right whale calving habitat –at any temporal resolution (see response to Comment 23).

Comment 9: One commenter suggested extending calving critical habitat into the Gulf of Mexico because the area was occupied by right whales at the time the species was listed and because of recent calving events there.

Response: NMFS is not aware of known incidents of right whale calves being born in the Gulf of Mexico. Right whales have been observed only rarely in the Gulf of Mexico. The few published sightings (Moore and Clark 1963; Schmidly and Melcher 1974; Ward-Geiger *et al.* 2011) represent either right whale presence that is abnormal (*i.e.* outliers) or a more extensive historical range beyond the current sole known calving and wintering ground in the waters of the

southeastern United States (Waring *et al.* 2009). We also concur with other right whale researchers that the Gulf Stream serves as a thermal barrier preventing right whales from routinely using the Gulf of Mexico (Keller *et al.* 2006, Good 2008, Keller *et al.* 2012). Therefore, we are not extending the critical habitat to include the Gulf of Mexico.

Comment 10: One commenter stated that Unit 2 should match the area in Action 1 Alternative 9a of Regulatory Amendment 16 (Reg-16) under consideration by the South Atlantic Fishery Management Council for the Snapper-Grouper Fishery Management Plan (S-G FMP).

Response: We do not agree with matching the boundaries as specified by the commenter. The area created for S-G FMP Reg-16 meets the needs of a fishery management plan development process but is not consistent with the ESA-specific requirements for designation of critical habitat. Based on the statutory definition of critical habitat we applied a step-wise approach to identifying occupied areas that may be designated as critical habitat for North Atlantic right whales. Briefly, the steps we followed included: (1) identifying the right whale range, (2) identifying areas within that range where physical or biological features essential to right whale conservation are found, and (3) determining if those features may require special management considerations or protections. The boundaries of Alternative 9a do not contain the full area identified by us as containing physical features essential to the conservation of the North Atlantic right whale, particularly off South and North Carolina.

Comment 11: A number of comments supported the designation of Unit 2 as critical habitat. Comments included a) the calving area critical habitat should be expanded to incorporate the entire area proposed as Unit 2, b) strong support for the area proposed for critical habitat, and c) the Bureau of Ocean Energy Management (BOEM) is supportive of the proposal to replace critical habitat for the North Atlantic right whale.

Response: NMFS appreciates the support.

Comment 12: One commenter suggested considering additional information to better support the calving area critical habitat designation including:

- a) identifying the relative value of various nursery areas (*e.g.* track the location where an individual was born to see if differential growth or survival occurs) as has been done in fishery science;
- b) using opportunistic sightings;
- c) changing distribution of calves due to climate change –a northward shift in cow-calf distribution may mean a greater need to protect additional northern habitat, while expanding distribution to north and south could be due to increased abundance of whales;
- d) using a depth contour that captures 90% of right whale cow-calf pairs.

Response: As mentioned in the **Federal Register** Notice of Proposed Rulemaking and Biological Source Document, the ESA definition of critical habitat provides NMFS with a step-wise approach to identifying areas that may be designated as critical habitat for North Atlantic right whales. Briefly, the steps we follow include: 1) identifying the right whale range, 2) identifying areas within that range where physical or biological features essential to right whale conservation are found, and 3) determining if those features may require special management considerations or protection. Calving is essential to the species' conservation and the physical features that are essential to successful calving include: 1) calm sea surface conditions associated with Force 4 or less on the Beaufort Scale, 2) sea surface temperatures from 7 °C through 17 °C, and 3) water depths of 6 to 28 meters where these features simultaneously co-occur over contiguous areas of at least 231 km² during the months of November through April. The distribution of optimal values of these features changes throughout a calving season, and

between calving seasons. Further, the needs cow-calf pairs' have for each of the individual parameters change over the course of rearing, and the pairs move across broad swaths of the calving area to seek out optimal conditions and to condition the calf. Therefore, we believe that all of Unit 2 is highly valuable to calving right whales.

Opportunistic sightings lack associated information on search effort so are not included in efforts to statistically analyze and predict right whale habitat. Thus, Garrison (2007), Good (2008), and Keller *et al.* (2012) did not use opportunistic sightings in their work. However, we reviewed opportunistic sightings when considering the importance of calving habitat south of proposed Unit 2. Opportunistic sightings were used to assess the consistency of calving right whale use of that area.

We also considered climate change effects on calving right whale (including calf) distribution using the same step-wise approach to identify critical habitat. We determined that increased temperatures and hurricane activity due to global climate change may alter sea surface conditions within the specific area such that the area capable of providing dynamic, optimal combinations of the essential features is reduced and the ability of the specific area to support the key conservation objective of facilitating successful calving is reduced. We determined that the essential features of the calving habitat may require special management considerations or protection due to future climate change impacts. Existing predictions of climate change impacts do not provide fine enough information to determine how the distribution of essential features in the SAB will change in the future, and thus setting boundaries based on future climate change impacts would be speculative at this time.

Comment 13: One commenter submitted a number of comments on the underlying models used to identify the Unit 2 proposed critical habitat. Comments included: 1) concern

about averaging and aggregating data, 2) the treatment of zero-inflated data, 3) suggestions for other parameters (water density, underwater currents, substrate, and salinity) to include, 4) the nonrandom nature of survey design used to collect underlying data, 5) concern over model fit, 6) the use of limited information, 7) use Easting (relative east-west location) and Northing (relative north-south location) or the interaction parameter of the two variables, and 8) models should be updated and viewed with caution. Another commenter suggested that we utilize the Duke University Marine Geospatial Ecology Lab (MGEL) and Atlantic Marine Assessment Program for Protected Species (AMAPPS) models of marine mammal habitat utilization when making decisions on North Atlantic right whale (NARW) Critical Habitat boundaries.

Response: The first comment is focused on methods used in generating models described in publications we used to inform critical habitat, and changing those analyses is beyond the scope of the actions proposed in this rule. In general, we use information from a wide variety of sources. We are required to gather, review, and evaluate available information to ensure it is reliable, credible, and represents the best scientific and commercial data available. We reviewed Garrison (2008), Keller *et al.* (2012), and Good (2008) and found these to be the best scientific and commercial data available at the time the proposed rule was published in the **Federal Register**. As far as updating models: we did not, nor does the ESA require us, to develop new models as part of the rulemaking. Moreover, based on our review of whale sightings dated after publication of the models (see response to comment 7), the models are performing well in predicting the overall boundaries of the calving area. However, we will continue to monitor ongoing studies and publications to determine if new information will enhance our understanding of right whale habitat, and the ESA allows us to revise critical habitat when appropriate.

We are aware that the Duke Marine Geospatial Ecology Lab and AMAPPs are modeling densities and abundance of right whales; however, those products were not available at the time this final rule was developed.

Comment 14: One commenter noted that Good *et al.* (2008) stated that bottom type is an important habitat component that was not included in either modeling approach. This commenter also reported that the bottom type had been mapped for a significant portion of the area where right whales occur in the Southeast U.S. Atlantic (A screenshot of the SAFMC Habitat and Ecosystem Viewer was included with the comment, which we assume was taken from http://ocean.floridamarine.org/SA_Fisheries/). The commenter went on to state that including this available information into the modeling approach might improve our understanding of habitat selection by right whales.

Response: We agree that additional information into the modeling approach might improve our understanding of habitat selection by right whales. However, the information in Good (2008), also said this about substrate type: “Substrate was not considered because of lack of suitable data for the broader Atlantic Ocean and because available substrate data for the [South Atlantic Bight] showed little variation.” Therefore, it was concluded that the inclusion of the substrate information as provided in Good (2008) was not warranted at this time. In addition, see our response to comment 13 above.

Comment 15: One commenter stated that Good’s (2008) box-plots showed that the majority of mother-calf pairs in the southeastern U.S. were observed from 6 through 20 m depth and 11° through 21° C sea surface temperature (SST) in calm waters. However, the proposed right whale critical habitat (Unit 2) includes waters with SSTs ranging from 8° through 17° C

and depths of 6 through 28 m, which are beyond the range where right whales are typically observed.

Response: We assume the commenter is referring to Good's (2008) box-plots of habitat conditions illustrated in Figure 3. This figure compares habitat conditions associated with mother-calf sightings against the survey search area. The data and, by extension, the figure illustrate that mother-calf pairs occurred in shallower and cooler waters compared to available conditions throughout the study area. Good (2008) used Mantel tests to evaluate the association of mother-calf pairs with habitat conditions. Although she found SST and depth were significant predictors, Good (2008) didn't specify what proportion of observed or predicted sightings, corrected for effort, would occur with the various SST and depth ranges. For that information, we looked to Garrison (2007).

Garrison (2007) generated a figure that illustrates percentile of predicted sightings per unit of effort by water depth and temperature (see Garrison's Figure 16). For reasons specified in the Notice of Proposed Rulemaking and Biological Source Document, we concluded Garrison's (2007) 75th percentile and Good's (2008) habitat selected in 3 and 4 months were the most appropriate bases for determining the best distribution of essential features of right whale calving habitat. Garrison's (2007) Figure 16 illustrate that SST ranging from 7-17 °C and depth ranging from 6-28 m are habitat features associated with the 75th percentile of predicted sightings per unit of effort. Thus, the physical features essential to the conservation of the North Atlantic right whale, which provide calving area functions in Unit 2 include sea surface temperatures of 7 °C to 17 °C, and water depths of 6 to 28 meters.

Comment 16: One commenter stated that the proposed critical habitat is strongly based on areas from Keller *et al.* (2012) that indicate the probability of right whale sightings based on

SST alone (see Figure 8b in Keller *et al.* (2012)). Depth should have been included in the model similar to cell mapping in Good *et al.* (2008).

Response: We acknowledge that Unit 2 closely resembles Figure 8b from Keller *et al.* (2012). As indicated in the Source Document, in order to identify the area that contains essential features of calving habitat, we used the predictive models of Garrison (2007), Good (2008), and Keller *et al.* (2012). All of these authors included water depth and sea surface temperature in their models because they found depth and sea surface temperature were significant variables in predicting the spatial distribution of calving right whales. Keller *et al.*'s (2012) Figure 8b illustrates where their model, which does include bathymetry, predicts right whales to be distributed based on SST in December through March (as opposed to June through September). This temporal delineation rightfully constrains the model to predicting calving habitat during the known right whale core calving season of December through March.

Comment 17: One commenter noted that Good *et al.* (2008) limited their dataset to presence only to reduce the influence of the zero observations. This commenter was concerned that eliminating the zeros could give a false increase in the preferred habitat and, resultantly, in protecting calving habitats that are not truly critical habitat for right whales.

Response: We concur with Good *et al.* (2008) in that this is a suitable approach for a very small population. As that author states: "if habitat conditions associated with whale absence are incorporated into a model as 'unsuitable', the outcome may be biased away from suitable habitat due to limited species dispersal." This would be particularly true with a small, remnant population like right whales. Therefore, we do not agree that eliminating zeros from the data will result in protecting calving habitats that are not truly critical habitat for right whales.

Comment 18: The justification for choosing the 75[th] percentile of the predicted whale sightings stated that 91% of the observed whale sightings were included in the selected model. This transforms the goal of the modeling exercise from an exercise to select the best habitat based on environmental parameters to a selection of a model to best cover the data. Therefore, the selection of the model to describe the critical habitat may not give a realistic representation of the environmental parameter's influence on the distribution of the species.

Response: Garrison (2007), Keller *et al.* (2012), and Good (2008) found that sea surface temperature and water depth were significant predictors of calving right whale spatial distribution. Good (2008) also found surface roughness to be a significant predictor. The extent to which calving right whales select the range and combination of these features is best represented as a spatial gradient between the most suitable and least suitable environments. There is no discrete spatial boundary for the habitat (*e.g.* shore line, watershed boundary, etc.). Therefore, NMFS defined a geographic area that contained a significant amount of the habitat features used by a large proportion of calving right whales (*i.e.* “best” plus “good” habitat) over the entirety of the calving season. When selecting boundaries of critical habitat, we used the model results, but we also considered the behaviors, physiologies, and growth and development of cow-calf pairs during the calving season, including the significant amount of movement of pairs over the period. We also considered the fact that the distribution of temperature and surface roughness values changes over the course of calving seasons, and between calving seasons. The purpose of a critical habitat designation is to facilitate compliance with section 7 of the ESA, year in and year out, to ensure that actions of federal agencies do not destroy or adversely modify critical habitat. This objective is accomplished by evaluating whale presence and behavior, and status of essential features, in specific project areas at the time they are

proposed to be implemented. The critical habitat features and boundaries being designated will facilitate compliance with ESA section 7.

Comment 19: One commenter inquired about the portion of the population that uses the proposed critical habitats during the winter months. The commenter also asked at what point does the critical habitat no longer become vital on a monthly basis. This information would be useful for planning purposes.

Response: It is not entirely clear, but we believe this commenter is inquiring about either the demographic segments or how many right whales are in the calving area critical habitat on a monthly basis. We know all demographic segments (adult females and males, juveniles, and calves) may be found within the calving area critical habitat in the winter months. As far as the proportion of the total right whale population that uses the calving area critical habitat then, we do not know. We know that as many as 243 different whales have been seen in the Southeast U.S. during one winter (P. Hamilton pers. Comm., April 11, 2014). We interpret the second question to be asking when are potential impacts to right whales in this area no longer of concern. From Good (2008), we know that at least 85% of all observed right whale mother-calf pair sightings from January 2000 through March 2005 are located within the modified calving area critical habitat (Good 2008). Generally, by the end of March, mother-calf pairs have begun moving northward out of the area.

Designation of a Migratory Corridor

A number of comments focused on the agency's determination that we are unable to identify physical or biological feature associated with right whale migration. These ranged from comments in favor of the agency designating a migratory corridor and comments in support of the agency's determination that identification of features associated with migration is not

possible at this time. This determination was based on our review of the best available information.

Many of the comments received advocating the designation of a migratory corridor focused on the presence of right whales but provide little if any additional information on the characteristics of physical and biological features that enable the agency to identify and define critical habitat.

Comment 20: A number of commenters stated that the agency must designate a migratory corridor for the North Atlantic right whale in the mid-Atlantic, asserting there is no other route between the southern calving and northern feeding grounds. They stated that the agency undervalued the data in the available studies and other data the agency has relied upon in other rulemakings regarding protections for North Atlantic right whales. The commenters stated that the agency's summary in the proposed rule relied primarily on a single study of the broad movements of two tagged animals to conclude that not all right whales migrate within 30 miles of shore, the distance referenced in the petition to revise critical habitat. The commenters stated that the study in question (Schick *et al.* 2009) showed that while not all right whales are found within 30 miles of the coast, the tagging data from Schick *et al.* (2009) show that the tagged whales were primarily found within 30 miles of the coast of the mid-Atlantic and only appeared to travel significantly farther from shore off of the Delaware Bay area toward Block Island Sound. The commenters also stated that a recently published report of the tagging of two right whales in 2014 showed a similar nearshore travel pattern, with all movements on the narrow shelf to the Chesapeake Bay and only farther offshore northward of that area where the shelf is broader.

Response: Given that large-scale migratory movements between feeding habitat in the northeast and calving habitat in the southeast are a necessary component in the life-history of the North Atlantic right whale, we agree with the commenters that facilitating successful migration by protecting the species' migratory area is a key conservation objective that could be supported by designation of critical habitat for the species. As described in the Biological Source Document, we explored the possibility of using known occurrences of North Atlantic right whales in the mid-Atlantic to identify the specific areas used for migration and essential physical and biological features in those areas. Data and information considered by NMFS included sightings data used while developing the rule to implement ship speed restrictions to reduce the threat of ship collisions to North Atlantic right whales (73 FR 60173, October 10, 2008); the studies by, Knowlton *et al.* (2002), and Firestone *et al.* (2008); and telemetry data and model results used in Schick *et al.* (2009).

The authors of these three publications expressed whale distribution in terms of distance from shore. For example, of the sightings used in support of the ship speed rule, NMFS found that approximately 83 percent of all observed right whale sightings occurred within 20 nm (37 km) of the coast, and approximately 90 percent of all right whale sightings occurred within 30 nm (55.6 km) of the coast (73 FR 60173). Schick *et al.* (2009) found that, based on telemetry data for two tagged whales, peak habitat suitability occurred in the range of 17 to 108 nm from shore for one tagged whale (a mother-calf pair), and for the other, peak suitability occurred in the range of 8 to 40 nm from shore for the other. Regardless of the distance from shore in which right whales have been documented along the mid-Atlantic, we found no evidence to support a conclusion that “distance from shore” is a physical or biological habitat feature essential to the

conservation of right whales. In other words, we found no basis to suggest that right whales key in on distance from shore, or somehow use distance from shore, to facilitate migration.

The commenter also cited the recently published report of two tagged right whales from 2014. We are aware of this three-year ongoing North Atlantic right whale telemetry project that tagged three right whales in 2014, and we did consider the preliminary results of this work. Estimated tracks of two of the whales were well publicized and made available on www.alaskasealife.org. However, we are also aware that there are varying levels of error and uncertainty associated with those preliminary telemetry tracks, and the data have not been processed completely to account for those errors (thus, the website correctly refers to the tracks as “estimated tracks”). Further, similar to the discussion of the Schick *et al.* (2009) study above, these preliminary data do not provide us with any indication of physical or biological features essential to the conservation of right whales and whether any such features warranted any special management considerations. Therefore, we determined that those data are preliminary and do not represent the best available information present at the time of this final rule. For the reasons stated above, we conclude it is not possible to designate migratory critical habitat at this time.

Comment 21: Several commenters stated that they supported our conclusion that there is no basis for the designation of a migratory corridor as critical habitat because there are no reliable data by which the physical and biological features of migratory critical habitat can be determined.

Response: We agree with this comment.

Comment 22: One commenter stated that right whales seasonally residing in Cape Cod waters are known to travel along the mid-Atlantic coastal waters as part of their migration between calving grounds offshore of the southeastern United States and feeding areas in Cape

Cod Bay and the Gulf of Maine. Both the Biological Source Document and the proposed rule reference Schick *et al.* (2009) in support of the statement that “The space used by right whales along their migration remains almost entirely unknown.” The commenter suggested that, while these data and analyses may not be judged sufficient to designate a critical habitat along a migratory corridor, the compilation of sightings data from 1974-2002 prepared as part of the analyses for the Ship Strike Reduction Program

(<http://www.greateratlantic.fisheries.noaa.gov/shipstrike/doc/Historical%20sightings.htm>), and the papers of Knowlton *et al.* (2002), Firestone *et al.* (2008), Asaro (2012), Laist *et al.* (2014), LaBrecque *et al.* (2015), and Andrews (2015) highlight areas of migratory importance and should be considered for designation.

Response: The sightings data referenced compiled from 1974-2002 prepared as part of the analyses for the Ship Strike Reduction Program were considered. For the purposes of the ship strike rule analysis, the focus was to determine the risk of ship strikes of right whales in the vicinity of ports. As discussed, the best available data are limited in scope, and do not provide a complete description of migratory habitat (*i.e.*, survey data were biased near shore, and not all right whales migrated within 30 nm of shore). Since the vast majority of the survey effort was focused close to shore, the fact that the majority of migrating whales were observed close to shore is not surprising and does not indicate that distance from shore and shallow habitat contain or comprise essential features for migration. The one completed study that removes the associated biases related to survey effort and location was based on two telemetry tagged whales and the movements of those whales were much broader and variable (Schick *et al.* 2009).

Comment 23: One commenter stated that the rationale for not designating a migratory corridor is not convincing. The commenter stated that female right whales are seen both in

nearshore areas within 30 nm of shore and also much farther offshore, which suggests that the migratory corridor may be wide, not that it is non-existent or impossible to delineate in some form. The commenter stated that adequate information exists, along with viable models, to provide the necessary data to develop a migratory corridor that would provide the minimum necessary requirement to enhance survivability of the right whale populations under consideration (Firestone *et al.* 2008, LaBreque 2015, Pendoley *et al.* 2014, Schick *et al.* 2009, Whitt *et al.* 2013).

Response: See response to Comment 20.

Comment 24: One commenter stated that ensuring that mothers and calves are not disturbed as they transit the Mid-Atlantic on their way to the southern calving grounds is a special management consideration associated with migration. The comment stated that this is essential to the conservation of the species and that this area and the essential life activities that occur in it may be impacted by the activities we have identified for Unit 2, as well as by oil and gas activities, vessel traffic, and other federal actions.

Response: We agree that migrating right whales, including mothers and calves, need to be protected. The potential impacts identified in the comment, however, relate to potential impacts to individual whales, which would be addressed through a jeopardy analysis as required under section 7 of the ESA. The impacts identified by the commenter do not relate to physical and biological features associated with possible critical habitat used by migrating whales. Designated critical habitat receives protection pursuant to section 7 of the ESA through a separate provision and process in which potential adverse modification or destruction of the habitat must be evaluated. The protection of physical and biological features of critical habitat is distinct from the protection the animals themselves receive under section 7 of the ESA.

Comment 25: One commenter stated that the importance of migratory corridors as a Biologically Important Area (BIA) is discussed in the Aquatic Mammals Journal Special Issue on BIAs for Cetaceans within U.S. waters. The four categories of BIAs identified in the journal articles are: reproductive areas, feeding areas, migratory corridors, and areas in which small and resident populations are concentrated. NOAA's Cetsound website (cetsound.noaa.gov) includes a CetMap module that can display Migration BIAs for numerous cetacean species, including the North Atlantic right whale. Migration BIAs cover an extensive area of the Atlantic coast from Maine to Florida. The commenter recognized that the CetMap migratory corridor was not intended as a regulatory boundary, but the absence of a migratory corridor of any size within the proposed rule means that one of the major BIA categories important for the survival of the North Atlantic right whale has been omitted.

Response: Schick *et al.* (2009) provide the only unbiased data and analysis on the actual extent of movements of right whales in the Mid-Atlantic. Although we acknowledge that some portion of the right whale population is sighted transiting through the waters of the Mid-Atlantic, designating migratory critical habitat requires more than just a general understanding of where some whales may be seen transiting (see Response 20 above). The paper identified by the commenter, LaBrecque *et al.* (2015), which discusses a migratory corridor for right whales relies on the same studies that we analyzed in our efforts to identify essential physical and biological features associated with migratory behavior in right whales. Although the authors identify a "migratory BIA" for right whales, this paper, like the others evaluated through this rulemaking, do not provide us with a basis for identifying physical or biological features used by right whales to facilitate their migration.

Comment 26: One commenter stated that the features of migratory habitat are: shallow, minimal slope, nearshore. Another commenter stated that the primary physical features for a migratory habitat would appear to be the existence of a contiguous volume of ocean water, within an appropriate range of temperatures which provides a path through which North Atlantic right whales migrate from their foraging areas to their calving areas and return.

Response: The non-specific terms “shallow,” “minimal slope” and “nearshore” simply describe the general bathymetry of nearshore shallow continental shelf benthic habitat. The comment did not include any data or specific information that would allow us to define the appropriate or essential values of depth or slope within right whale migratory habitat, nor are we aware of any such data. The suggestion that right whale migratory habitat appears to be the existence of a contiguous volume of ocean water, within an appropriate range of temperatures that provides a path through which North Atlantic right whales migrate from their foraging areas to their calving areas and return is also non-specific. Again, the comment did not include any additional data or information that would allow us to define an appropriate volume of water or range of water temperatures that are essential for the conservation of right whales. What the range of temperatures that may be essential for right whale migration is unknown but is a potential focus of future research and analysis.

Comment 27: One commenter stated that many of the same habitat features identified as essential for calving and nursing whales south of Cape Fear (*i.e.*, relatively calm, shallow waters between 7–17° C) are present in the coastal waters between southern North Carolina and southern Massachusetts. The commenter states that although empirical data to support a conclusion are lacking, it seems reasonable to assume that calves and their mothers would continue to prefer waters with those characteristics as long as possible along their migratory

route. This is consistent with observations that mother-calf pairs do not follow a straight-line route between the calving and feeding grounds, which would take them far off shore, but rather follow the coast line to at least the Chesapeake Bay where those same conditions also occur.

Response: The commenter is correct in noting that there are no empirical data to support the suggestion that right whale mother-calf pairs' migratory movements are linked to the temperature and sea states similar to essential calving features. Also, as discussed previously, data from two tagged female right whales, one with a calf, demonstrate that one migrating right whale (the mother calf pair) moved with a range of peak habitat suitability of 17 to 108 nm from shore, and for the other whale, peak suitability occurred in the range of 8 to 40 nm from shore (Schick *et al.* 2009). This contradicts the statement by the commenter that transiting right whales "follow the coastline." While two recently tagged animals provide additional information regarding right whale movements, Schick *et al.* (2009) still provide the best available data related to movements of migrating whales. The comment itself does suggest to us potential future research into whether temperature and sea state are possibly being actively selected by transiting right whales.

Comment 28: One commenter stated that the agency used the same studies the commenter considered in analysis of whether it is possible to identify essential migratory features in prior rulemakings to protect North Atlantic right whales. The commenter states that the agency inexplicably dismissed them for purposes of this rulemaking, by claiming that they are effort-biased (*i.e.*, most effort is within 30 miles of shore).

Response: The commenter may be referring to the ship strike rule analysis (73 FR 60173, October 10, 2008). For the purposes of the ship strike rule analysis, the nearshore area was of greatest interest for determining risk in the vicinity of ports. The data were used to determine the

risk to the species in order to mitigate the threat of ship strikes of right whales in these areas, not to identify a migratory corridor or physical and biological features essential to the conservation of the species which may require special management considerations or protection. The difficulty in using the data for identification of critical habitat is also discussed above.

Comment 29: One commenter stated that with regard to identifying features essential to conservation of the species along its migratory route, Knowlton *et al.* (2002), which is cited in the Biological Source Document found that 93% of all sightings are within 25 fathoms of water and 80.5% of the sightings are within 15 fathoms of water indicating reliable physical parameters that are likely features for the mid-Atlantic migratory corridor.

Response: In terms of water depth, Knowlton *et al.* (2002) found that a majority of the sightings were within 5 to 10 fathoms of water, with the second highest number of sightings in 0 to 5 fathoms of water. The analysis indicated that 93 percent of sightings are in water depths of 25 fathoms or less, and 80.5 percent are in water depths of 15 fathoms or less. As noted above, in so far as the sightings were positively biased towards shore, it would also be expected that the water depth analysis would be positively biased towards shallow water.

Comment 30: One commenter stated that we should take the same approach to assessing the inclusion of migratory habitat in the designation as we did for calving and feeding habitat. Not all calving and feeding occurs within the areas identified in the proposed designation. However, the best available scientific information indicates that most whales use those areas for calving and feeding and supports inclusion of those areas in the critical habitat designation.

Response 30: As described in the proposed rule and Biological Source Document, we identified essential calving and foraging features that meet the definition of critical habitat. The areas we are designating as right whale critical habitat are the areas in which are found the

essential forging and calving features. As discussed in the Biological Source Document, the areas where right whales feed and calve are well established and thus we were able to analyze what specific physical and biological features are found in these areas that meet the definition of critical habitat as required by the ESA. Currently, based on the best available information, we do not know the actual route or routes that right whales typically use to transit between other habitats, nor do we have data to identify the essential physical and biological features of a migratory route. Some individuals advocate that because right whales are sighted in nearshore waters, those areas should be designated as critical habitat. This approach, however, fails to acknowledge the limitations of virtually all of the available sightings data and overlook the data provided by Schick *et al.* (2009), which show broad scale offshore movements of migrating right whales far beyond nearshore waters. Additional research is needed to help identify what areas are typically used by right whales for migration, so that we can begin to try to identify what physical and biological features are associated with such an area and whether or not, these as yet unidentified features may require special management and as such qualify for designation as critical habitat under the ESA.

Comment 31: One commenter stated that the rationale for excluding all areas along the migratory corridor from the proposed designation fails to recognize the importance of this corridor to the conservation of the species and the fact that most whales migrate through a fairly well-defined area. The commenter stated that although the data documenting right whale migratory patterns are less extensive than those for other activities in other areas, available data from whale sightings and the increasing number of tagging and passive acoustic studies strongly indicate that waters within 30 nm of shore are an important component of the migratory corridor likely used by most pregnant and nursing females and calves, as well as by other whales for

overwintering (Kraus *et al.* 1986, Kenny *et al.* 2001, Knowlton *et al.* 2002, Schick *et al.* 2009, Van Parijs *et al.* 2009, and Morano *et al.* 2012). The commenter stated that most right whales migrate between the calving and feeding grounds within a fairly well defined corridor, that we should expand the proposed critical habitat to include all waters that provide migratory and overwintering habitat for North Atlantic right whales within 30 nm of the coast between the proposed critical habitats areas in the northeastern and southeastern United States. Another commenter stated that there is little doubt that virtually all females and calves that use the calving grounds in winter pass through waters over the continental shelf between North Carolina and the known feeding grounds. The comment stated that the conservation of the species will be undermined if whales have no other way to transit between the two areas.

Response: See response to Comment 20.

Comment 32: One commenter stated that historical whaling records provide support for designating waters in the Mid-Atlantic region as migratory and overwintering areas in the critical habitat designation. The commenter stated that whaling records indicate that nearshore waters between Cape Lookout, North Carolina, and Nantucket, Massachusetts, at least historically, were important habitat for right whales from November through April. The commenter cited Reeves *et al.* (2007) who, based on a review of historical whaling records along the U.S. East Coast, estimated that at least 5,500 right whales were killed by whalers in the western North Atlantic between 1630 and 1950, with perhaps 80 to 90 percent killed during a 50-year period between 1680 and 1730. The commenter stated that most of that whaling occurred between the months of November and May and was conducted by shore-based whalers operating between North Carolina and Nantucket.

Response: Historical whaling records indicate the historic presence of North Atlantic right whales and are another source of non-systematic data that were collected for the purpose of documenting the harvest of whales for commercial purposes. These records merely provide broad geographic information concerning general locations of right whales during harvesting operations. The harvesting records do not provide information that can be used to identify the physical or biological features that promote the conservation of the species and which may require special management protections.

Identification of Additional Essential Features

Comment 33: One commenter stated that the proposed rule does not specifically identify features that may require special management considerations or protections, although these are discussed in the preamble.

Response: A detailed description of the physical and biological features we identified as essential to the conservation of the species and that may require special management considerations or protections are provided in the proposed rule as well as in the Biological Source Document and Section 4(b)(2) Report.

Comment 34: One commenter recommended that we expand the list of essential physical and biological features for North Atlantic right whales in all critical habitat areas to include the acoustic qualities that allow right whales to communicate efficiently and carry out other essential biological functions.

Response: The acoustic qualities or features of the habitat that are essential to the conservation of North Atlantic right whales are currently unknown. Clark *et al.* (2009) noted that specific questions and uncertainty exists regarding large whale communications and the potential for communication loss to lead to impacts to the conservation of right whales. These

researchers concluded that “At present, we can only speculate because we do not know enough details about when and how whales use their calls to communicate relative to the behavioral and ecological contexts, and how reductions in these capabilities translate to biological cost.” In addition Clark *et al.* (2009), with regard to bioacoustic effects of ocean noise states “.....the greatest uncertainties in our abilities to estimate the impacts of communication masking come from our ignorance of spatial and temporal scales over which animals engage in their bioacoustic activities. Very little is known about the ranges over which the large whales actually communicate...” Therefore, an expansion of the list of essential physical and biological features for North Atlantic right whales to include the acoustic qualities that allow them to communicate efficiently and carry out other essential biological functions is not warranted at this time. As new information becomes available, we will take appropriate action if warranted.

Comment 35: One commenter stated that we should identify water quality capable of sustaining robust copepod blooms without risk of passing contaminant concentrations through the food web to right whales as an essential habitat feature. The commenter stated that successful foraging also requires clean ocean waters that support healthy copepod populations on which right whales depend. Several activities discussed in the preamble to the proposed rule were identified as potentially requiring special management attention because of their effects on water quality (*e.g.*, sewage outfalls and offshore oil and gas development). Water quality, however, was not identified as an essential habitat feature.

Response: Although we did not include water quality as an essential feature of the critical habitat, we did consider impacts associated with water quality. The available information on the impacts of contaminants directly on copepod abundance and reproduction is lacking. Copepods are widely distributed over a vast expanse in the feeding area. While

contaminants could impact particular parts of this vast oceanic expanse, it is unlikely that contaminant concentrations would be of such magnitude as to negatively affect copepod blooms throughout the entire feeding area. Further, many of the contaminants such as DDT and PCBs have been banned in the United States for many years, and as such, contaminant inputs have decreased in many areas. Additionally, within our Section 4(b)(2) Report we identified two categories of activities, one under the Environmental Protection Agency's (EPA's) jurisdiction and one under the U.S. Coast Guard's (USCG's) authority, that may require modifications specifically to avoid adverse modification of the essential features. These activities are Water Quality/National Pollutant Discharge Elimination System (NPDES) and oil spill response. Effluent may affect the foraging feature by influencing the phytoplankton community structure. Similarly, dispersants used in oil spill response may have direct impact to the foraging features. Both of these activities would be subject to consultation requirements to ensure they do not destroy or adversely modify the essential features of the critical habitat.

With respect to the issue of contamination and passing contaminants throughout the food web to right whales, there is currently no evidence for significant contaminant-related problems in baleen whales (O'Shea and Brownell 1994, Weisbrod *et al.* 2000). Weisbrod *et al.* (2000) found that the PCB and pesticide concentrations in the right whale biopsies were relatively low and did not provide evidence that the endangered right whales bioaccumulate hazardous concentrations of organochlorines. We do not have evidence that the endangered whales bioaccumulate hazardous concentrations of organochlorines (Weisbrod *et al.* 2000). Although more research is needed, the existing data on mysticetes support the view that the lower trophic levels at which these animals feed should result in lower levels of contaminant accumulation than would be expected in many odontocetes, which typically show concentrations that differ

from those of baleen whales by an order of magnitude (O'Shea and Brownell 1994, Weisbrod *et al.* 2000). However, the manner in which pollutants negatively impact animals is complex and difficult to study, particularly in taxa for which many of the key variables and pathways are unknown (such as large whales) (Aguilar 1987; O'Shea and Brownell 1994).

Comment 36: The Marine Mammal Commission recommended that we should expand the list of essential physical and biological features for designated feeding areas to include (1) water quality able to sustain and maintain blooms of copepods, particularly *Calanus finmarchicus*, and (2) waters free of materials that could impede or interfere with the filter-feeding behavior of North Atlantic right whales.

Response: Regarding the recommendation to include water quality as a feature, please see response to Comment 35. We do not agree with the commenter's recommendation that we should identify "waters free of materials that could impede or interfere with the filter-feeding behavior of North Atlantic right whales" as an essential foraging feature, and that this proposed feature may need special management attention because placement of fishing or other lines in the water column could interfere with right whale filter feeding or become caught in right whale baleen. Although we agree that addressing direct impacts to right whales as they forage is important to the overall recovery and conservation of the species, this rule addresses impacts to the physical and biological features of the foraging habitat, not direct impacts to the species itself.

As provided throughout this rule, the features of right whale foraging habitat that are essential to the conservation of the North Atlantic right whale are a combination of the following biological and physical oceanographic features: (1) The physical oceanographic conditions and structures of the Gulf of Maine and Georges Bank region that combine to distribute and

aggregate *C. finmarchicus* for right whale foraging, namely prevailing currents and circulation patterns, bathymetric features (basins, banks, and channels), oceanic fronts, density gradients, and temperature regimes; (2) Low flow velocities in Jordan, Wilkinson, and Georges Basins that allow diapausing *C. finmarchicus* to aggregate passively below the convective layer so that the copepods are retained in the basins; (3) Late stage *C. finmarchicus* in dense aggregations in the Gulf of Maine and Georges Bank region; and (4) Diapausing *C. finmarchicus* in aggregations in the Gulf of Maine and Georges Bank region. Facilitating successful feeding by protecting these physical and biological features that characterize feeding habitat is a key conservation objective that is supported by designation of critical habitat for the species.

With respect to activities that may impede or interfere with filter-feeding behavior of right whales, such as placement of fishing or other lines in the water column that could interfere with right whale filter feeding or become caught in right whale baleen and thus pose direct impacts to the species itself, these impacts are not effects to the physical and biological features of the foraging habitat. These direct impacts to the species itself are already provided protection through Sections 7 and 9 of the ESA and through the MMPA.

Inclusion of Area to the South of Cape Cod/Nantucket in the Critical Habitat Designation

Comment 37: One commenter recommended that NOAA support research focused upon two areas likely critical to the NARW population: (1) the entire migratory corridor between the Southeast U.S. and the Gulf of Maine, and (2) a potentially important feeding, residency, and nursery area south of Cape Cod, Martha's Vineyard, and Nantucket.

Response: We agree and will continue to support research focused on identifying those physical and biological features that promote conservation for North Atlantic right whales.

Comment 38: Several commenters stated that we have inappropriately excluded the waters south of Cape Cod, specifically the waters south of Nantucket and Martha's Vineyard from the Unit 1 designation. While the agency concluded that right whale sightings in Block Island Sound have not been consistent annually, sightings of right whales off Nantucket and Martha's Vineyard have been consistent and may be increasing. The commenter referenced statements found in the Biological Source Document as evidence that Nantucket Shoals is a physical feature of right whale foraging habitat and therefore stated that we should include areas south of Cape Cod in the Unit 1 critical habitat designation.

Response: We acknowledge that sightings occur to the south and east of Unit 1 as depicted in Figure 9 in the Biological Source Document, including Nantucket Sound and Block Island Sound. There is no basis that we are aware of for the statement that sightings "may be increasing." Typically, whales were sighted in these areas in one year, but were not seen again in these areas on an annual basis. Therefore, a pattern of repeated annual observations is not evident in these areas. As a result, we have concluded that the combination of the physical and biological foraging features; including the dense aggregations of late stage *C. finmarchicus* are not present in these areas as found in the Gulf of Maine/Georges Bank region. We have concluded that most likely, these are sightings of transiting whales that may feed opportunistically while migrating to the Gulf of Maine/Georges Bank region (Richard Merrick, Pers. Comm., May 2010). As discussed in the Source Document, researchers have documented that right whales forage on the copepods other than *Calanus finmarchicus*, including *Pseudocalanus* and *Centropages typicus* as well as barnacle larvae (Mayo and Marx 1990, Baumgartner *et al.* 2007). These researchers note, that right whales quickly ceased foraging on these zooplankton assemblages indicating that the prey was likely not suitable to meet their

energetic requirements (Baumgartner *et al.* 2007). In addition, recent survey effort in the areas south of Cape Cod off of Nantucket, Martha's Vineyard and in Rhode Island Sound have observed socially active groups (reproductive behavior) of right whales, which provides some additional insight into the behaviors of right whales present in these areas (Kraus *et al.* 2014).

We have considered additional sightings data available (see Kraus *et al.* 2014, Khan, C. *et al.* 2010, 2011, 2012, 2014, Gatzke J. *et al.* 2013). Their inclusion does not fundamentally change the outcome of the analysis provided by Pace and Merrick 2008 in light of the 35 years of sightings data already used in that analysis (Richard Merrick, Pers. Comm., May 2010). However, we will continue to monitor sightings in these areas and will take appropriate action if warranted.

Therefore, we have concluded that the combination of physical and biological foraging features, including the dense aggregations of late stage *C. finmarchicus*, are not present in these areas and thus do not include these areas south of the Gulf of Maine-Georges Bank region in the boundaries of right whale critical habitat. We will continue to monitor sightings in these areas and will take appropriate action if warranted.

Comment 39: One commenter stated that we have acknowledged the importance of the areas surrounding Nantucket Sound for spring aggregations of copepods. The agency has stated in a separate resource document that the early spring abundances of *C. finmarchicus* increase throughout the ecosystem, but are highest in the shallower portions of the Gulf of Maine, on Georges Bank and on Nantucket Shoals. Abundance continues to increase into late spring, with high abundance throughout the Gulf of Maine, Georges Bank, the Southern New England shelf and the outer Middle Atlantic Bight shelf. The comment referenced the following NMFS

document: Seasonal and Spatial Trends' in Ecology of the Northeast Continental Shelf: Zooplankton. Retrieved from: www.nefsc.noaa.gov/ecosys/ecology/Zooplankton/.

Response: The website cited by the commenter describes our current understanding of ecosystem properties of the Northeast U.S. Continental Shelf Large Marine Ecosystem (NES LME). As described, the commenter is correct that *C. finmarchicus* is found seasonally throughout the Gulf of Maine, Georges Bank, the Southern New England shelf and the outer Middle Atlantic Bight shelf including Nantucket Shoals. As noted, given the diversity of zooplankton (> 100 species), it is difficult to generalize seasonal and interannual trends; the dynamics of individual species can be very different. As discussed in the Biological Source Document, right whales must locate and exploit extremely dense patches of zooplankton to feed efficiently (Mayo and Marx 1990).

Bi *et al.* (2014) studied the abundance of the subarctic copepod, *Calanus finmarchicus*, and temperate, shelf copepod, *Centropages typicus*, over the Northeast U.S. continental shelf (NEUS) from 1977–2010. These researchers studied variation in long term trends and seasonal patterns for the two copepod species for four sub-regions: the Gulf of Maine (GOM), Georges Bank (GB), Southern New England (SNE), and Mid-Atlantic Bight (MAB). Results suggested that there was significant difference in long term variation between northern region (GOM and GB), and the MAB for both species. *Calanus finmarchicus* had the highest abundance in the Gulf of Maine and Georges Bank followed in Southern New England region. Relative to the Gulf of Maine and Georges Bank, the long term trend of *C. finmarchicus* showed more variation in the SNE but less variation than the Mid-Atlantic Bight (MAB). The long term abundance of *C. finmarchicus* showed more fluctuation in the Mid-Atlantic Bight than the Gulf of Maine Georges Banks region (Bi *et al.* 2014).

As described above and in the Biological Source Document we have used foraging right whales as a proxy for the presence of essential foraging features because basin-scale zooplankton monitoring schemes have proved ineffective in detecting the high concentrations usually present in the vicinity of actively feeding whales. Furthermore, zooplankton such as *C. finmarchicus* are found throughout the ocean, but frequently at concentrations far too low to meet right whales' energetic requirements (Baumgartner *et al.* 2007). As discussed, using direct copepod sampling efforts to identify where dense aggregations occur is also confounded by the fact that sufficient data are not available to establish a specific threshold density of *C. finmarchicus* that triggers feeding.

While *C. finmarchicus* is present in the waters south of Cape Cod including Nantucket Sound and Martha's Vineyard, we have concluded that those areas do not have the combination essential physical and biological features, including late stage *C. finmarchicus* in dense aggregations that are evident in the GoM-Georges Bank region.

4(b)(2) Report

Comment 40: One commenter stated that our Section 4(b)(2) Report does not present a clear assessment of the costs and benefits of the proposed designation. In addition, the commenter stated that the report underestimates the total section 7 administrative costs that will be incurred because of the proposed critical habitat designation. The commenter stated the 4(b)(2) Report's estimated section 7 consultation administrative costs are extraordinarily low and are inconsistent with other recent section 4(b)(2) cost assessments performed by NMFS. The commenter cited two recent administrative cost estimates they believe provide more accurate administrative cost estimates including the recent 4(b)(2) impact analysis prepared for the

Northwest Atlantic Ocean Distinct Population Segment of the Loggerhead Sea Turtle critical habitat designation.

The commenter stated that we improperly concluded that we are unable to estimate the critical habitat-related section 7 administrative costs associated with oil and gas exploration and development in Unit 1 on the basis that there is not a consultation history on this activity. The commenter stated that section 7 consultations for actions involving offshore oil and gas-related activities that have been completed in other areas, such as the Gulf of Mexico and Alaska, as well as for certain areas in the Atlantic Ocean, could be used as the basis for estimating the costs of future oil and gas-related consultations in Unit 1.

Response: We disagree. As discussed in the 4(b)(2) Report, we concluded that no categories of future federal actions would require consultation solely due to the critical habitat; all future activities will involve consultation on impacts both to the species and to critical habitat. The administrative costs we estimated as being associated with the critical habitat consultations represent the incremental costs of conducting critical habitat analyses in consultations on federal actions that “may affect” the essential features of the critical habitat. According to our regulations, we are required to analyze the incremental (*i.e.*, the portion of) costs attributable to the critical habitat. Therefore, consistent with our previous critical habitat designations, any administrative costs associated with evaluating impacts to the species are not included in the administrative costs we estimated for the proposed North Atlantic right whale critical habitat.

Based on our review of past consultations and on comments received, we have identified six categories of activities that may affect the critical habitat: National Pollution Discharge Elimination System (NPDES) permitting, oil spill response, dredging and spoil disposal, marine construction permitting, construction and operation of offshore liquefied natural gas (LNG)

facilities, and construction and operation of energy facilities and sand extraction on the Outer Continental Shelf. Of these six categories, we identified two categories of activities, one under the Environmental Protection Agency's (EPA's) jurisdiction and one under the U.S. Coast Guard's (USCG's) authority, that may require unique modifications specifically to avoid adverse modification of the essential features, in addition to modifications that may be required to address impacts to the whales. We have also identified four new (*i.e.*, not previously consulted on) categories of federal activities that may occur in the future and, if they do occur, may affect the essential features. These potential activities are: oil and gas exploration and development activities, offshore alternative energy development activities, directed copepod fisheries, and marine aquaculture. Due to uncertainty in timing of these activities and a lack of a consultation history for these four new categories, we are not able to project annual administrative costs for future consultations because we don't know how many such activities might occur. However, we expect any of these consultations would each result in incremental administrative costs for the agencies and applicants involved of \$5,080 per action, again, because these activities will also require consultation due to impacts to the whales.

As discussed in the Section 4(b)(2) Report, we used administrative cost estimates for section 7 consultations developed by Industrial Economics, Inc. (IEc 2014, See exhibit 2-1 at page 2-11 in: Industrial Economics (2014) Economic Analysis of Critical Habitat Designation of Marine Habitat for the Northwest Atlantic Ocean Distinct Population Segment of the Loggerhead Sea Turtle, Final Report, April 29, 2014, prepared for NMFS, 220 pp, http://www.nmfs.noaa.gov/pr/species/documents/loggerhead_sea_turtle_fea-final.pdf). The IEC (2014) report provides estimates of administrative costs for different categories of consultations as follows: 1) new consultations resulting entirely from critical habitat designation; 2) new

consultations considering only adverse modification (unoccupied habitat); 3) re-initiation of consultation to address adverse modification; and 4) additional consultation effort to address adverse modification in a new consultation. Given that all the consultations we project to result from this designation will be co-extensive consultations on new actions that would be evaluating impacts to the whales as well as impacts to critical habitat, the administrative costs would all be in category 4 above. As discussed in the Section 4(b)(2) Report, we applied the conservative assumption that all potential future consultations will be formal consultations (as opposed to less expensive informal consultations); therefore, the incremental administrative costs for the agencies and applicants likely represents an overestimation of the costs.

The example of the higher administrative cost estimate provided by the commenter of \$20,000 per formal consultation was taken from the IEC (2014) report and represents the cost of a new consultation resulting entirely from a critical habitat designation (See exhibit 2-1 at page 2-11 (IEC 2014)). As explained above, this scenario does not apply to the North Atlantic right whale critical habitat designation.

The commenter asserted we improperly concluded that we are unable to estimate the critical habitat-related section 7 administrative costs associated with oil and gas exploration and development in Unit 1 on the basis that we do not have a consultation history on this activity and are therefore unable to estimate the number of projected section 7 consultations, and their associated costs, due to uncertainty about the nature, scope, and scale of future activities. The commenter referenced previous section 7 consultations for actions involving offshore oil and gas-related activities that have been completed in other areas, such as the Gulf of Mexico and Alaska, as well as for certain areas in the Atlantic Ocean. The commenter states that these consultations could easily be used as the basis for estimating the costs of future oil and gas-

related consultations in Unit 1. However, the number of past section 7 consultations that have taken place in Alaska, the Gulf of Mexico, and the Mid-Atlantic does not provide a basis by which we can estimate the number of potential future oil and gas related activities in Unit 1, as these planning areas and their state of development are vastly different from each other. As discussed, we have identified the incremental costs of future section 7 consultations associated with the designation of North Atlantic right whale critical habitat in our 4(b)(2) analysis. As discussed in the Biological Source Document and 4(b)(2) Report, we have identified oil and gas exploration and development as potential future activities that may affect the essential features of right whale critical habitat. Unit 1 is currently under a moratorium for oil and gas exploration. Within Unit 1, the current moratorium is due to expire in 2017 in U.S. waters. The scope and nature of the previous projects as well as the ecological settings vary between geographic region, each presenting unique environmental impacts and mitigation needs.

Comment 41: One commenter stated that the Section 4(b)(2) Report is disorganized, at times internally inconsistent, and does not provide a clear accounting or comparison of the projected costs and the projected benefits of the proposed designation. The commenter states that therefore it is difficult to provide specific responsive comments because the report does not provide a straightforward or specific explanation of what we have considered to be the costs of the designation.

Response: The commenter did not provide specific examples of what they believe is disorganized, unclear, or internally inconsistent with the Section 4(b)(2) Report. While we disagree with the comment, we have reviewed the Section 4(b)(2) Report in response to this comment and have made several minor organizational changes and updates. We believe that the Section 4(b)(2) Report provides as clear a non-speculative assessment of the economic, national

security, and other relevant impacts of the designation of critical habitat for the North Atlantic right whale as is possible given the nature of projecting the type, scale, number and timing of future activities that may trigger consultation. As discussed in the Section 4(b)(2) Report, the joint NMFS and Fish and Wildlife Service (FWS) regulations at 50 CFR 424.19 require NMFS and FWS to conduct an “incremental analysis” by considering economic impacts attributable to the proposed designation and to describe the impacts either qualitatively or quantitatively. In order to estimate the incremental costs of the proposed designation, we attempted to identify whether the potential impacts of any activities would require efforts to specifically avoid adverse modification or destruction of the proposed critical habitat. Any such efforts were considered incremental economic costs of the proposed critical habitat designation. In addition, the added administrative costs associated with evaluating impacts to the critical habitat are considered incremental costs of the proposed designation. While it was not possible to provide quantitative estimates for all the projected benefits and costs that may be uniquely attributable to North Atlantic right whale critical habitat, the analysis attempts to comprehensively identify (and, wherever practicable, quantify) benefits and costs attributable to the proposed action. We expect that this critical habitat designation will result in both direct and indirect benefits, with non-consumptive use and non-use values representing a significant component of the benefits derived from the critical habitat. These values are described qualitatively in the Section 4(b)(2) Report because the economic studies needed to quantify those benefits are not available. See also the Response 42.

Comment 42: One commenter stated that we incorrectly assumed that section 7 consultations for actions that are more likely to affect listed species than affect essential habitat features have zero costs associated with critical habitat. Further, the commenter stated that

consultation involving a species for which critical habitat has been designated results in additional costs that are attributable to the critical habitat designation, specifically as it relates to analysis contained in biological opinions. The commenter stated that the report therefore underestimates the total section 7-related costs incurred as a result of the designation of North Atlantic right whale critical habitat.

Response: The comment is not correct. We identified incremental administrative costs for each future action we projected would require consultation due to potential impacts to critical habitat. Administrative section 7 costs estimated at \$95,504 are presented in the Section 4(b)(2) Report and represent the annual, incremental (*i.e.*, additional), administrative cost of conducting critical habitat assessments for a projected 188 formal consultations per year over the next ten years. The estimated incremental administrative cost for the agencies and applicants involved in the consultations we identified totaled \$5,080 per action. The incremental administrative costs were derived from data from the Federal Government Schedule Rates, Office of Personnel Management, 2013, and a review of consultation records from several Service field offices across the country. In calculating these estimates, we assumed all future consultations would be “formal” (as opposed to some being informal); this assumption was applied to avoid underestimating the administrative costs associated with the critical habitat.

In terms of project modification costs, we identified those activities for which project modifications to address impacts to critical habitat could be required and would be different from any modifications needed to address impacts to the whales. We could not monetize project modification costs, because there are too many variables about potential future actions (*e.g.*, size, location, timing) that make it impossible to project exactly what type or combination of project modifications might be needed.

Special Management Considerations and Impacts of the Designation

Comment 43: Several organizations agreed with concerns we raised in the Biological Source Document that fragmented habitat may have an adverse impact on successful calving. Several of these commenters identified additional activities that they believed could fragment calving habitat and therefore be subject to federal consultation requirements. Among these were activities that could alter the acoustic habitat necessary for whale communication including seismic airguns, pile driving, underwater detonations, military sonar, and vessel traffic that could interfere with essential physical or biological features of calving habitat. One organization stated that installation and operation of oil and gas rigs and supportive structures could act as a type of barrier to calving right whales and prevent them from moving around to find optimal combinations of essential calving area features.

Response: As stated in the Biological Source Document, activities or conditions that fragment the contiguousness of the essential features or reduce or eliminate the “selectability” of dynamic, optimal combination of the essential features may have negative impacts on right whale calving. However, we do not agree that oil and gas rigs will reduce or eliminate the selectability of dynamic, optimal combination of the essential calving features. The BOEM presently implements a 50-mile no-leasing buffer from the Georgia, South Carolina, and North Carolina coastlines for oil and gas leasing, and the buffer is being proposed for the 2017-2022 lease sale. Unit 2 off Florida is not within BOEM’s South Atlantic Planning Area (*i.e.*, there are no oil and gas leases proposed through 2022), based on objections from the State. Consequently, no oil or gas rigs are projected to be located within Unit 2.

As stated in the Biological Source Document, activities or conditions that fragment the contiguousness of the essential features or reduce or eliminate the “selectability” of dynamic,

optimal combination of the essential features may have negative impacts on right whale calving. The Section 4(b)(2) report also outlines the process and set of activities we expect may affect the features of the calving habitat. The activities identified by the commenter may have impacts on right whales themselves but are not be expected to affect the essential physical and biological features of calving habitat. Therefore, we would consult on the effect of those activities on the listed species, not the designated critical habitat.

Comment 44: One commenter stated that the impacts of overlapping North Atlantic right whale calves and wind farms off Southeast North Carolina has not been studied and should be added as a future management concern. This commenter further advocated that no marine wind energy construction be allowed until impacts on right whales are understood.

Response: We are also unaware of any studies that investigate the effects of wind farms on right whales, including calves. In the proposed rule and Biological Source Document, we identified wind farms (*i.e.* offshore energy development) as a reason the calving habitat essential features may require special management considerations or protection, given potential impacts on (1) the essential physical features of North Atlantic right whale calving habitat and (2) the contiguousness and selectability of the essential features. Construction and presence of large arrays of permanent structures may limit the availability of essential habitat features to calving right whales. Arrays of structures may also act as physical barriers and prevent or limit the ability of right whale mothers and calves to select dynamic combinations of the essential habitat features. Windfarms may also impact the contiguousness the physical habitat features essential for successful calving. By explicitly acknowledging these potential impacts to calving right whale critical habitat, we encourage Federal agencies and applicants whose actions may affect

critical habitat features in these ways to consider and address these concerns to critical habitat in early planning of such activities.

Comment 45: One commenter stated that hydrokinetic energy is proposed for coastal Maine and was evaluated by the Department of Energy (DOE). The commenter stated that the DOE report, though acknowledging the lack of information on large-scale operations, also acknowledges that there could be adverse “effects on bottom habitats, hydrographic conditions, or animal movements.” The commenter further stated that the DOE Report indicated that floating and submerged structures, mooring lines, and transmission cables associated with large ocean energy facilities could interfere with the movement of animals and it cites entanglement risk for right whales that has been documented in other lines and cables.

Response: In Unit 1, we considered the potential impacts of wave and tidal energy facilities, should they be developed, on dense aggregations of copepods and concluded based on the information available that the activity would not likely affect the survivability of dense copepod aggregations. We do not believe that hydrokinetic energy facilities will impact essential physical features in Unit 1. The basin-wide scale of the physical oceanographic features we have identified as essential features of foraging habitat in Unit 1 will not be affected by the relatively localized impacts of hydrokinetics energy facilities.

Most of ocean energy and hydrokinetic renewable energy technologies remain at the conceptual stage and have not yet been developed as full-scale prototypes or tested in the field (DOE2009). Several potential hydrokinetic tidal energy sites have been identified in Maine as part of Maine Tidal Power Initiative (Available at: <http://umaine.edu/mtpi/overview>). These sites are all located inshore, either at the lower reaches of rivers or bays. Studies are underway at a

potential tidal turbine site in Eastport, Maine to better understand the impact a tidal energy project could have on fish.

The DOE (2009) report, cited by the commenter, indicates that “effects on bottom habitats, hydrographic conditions, or animal movements” may possibly need further investigation as part of siting and licensing a project investigation, not that there could be adverse effects as suggested. Future proposals for development of hydrokinetic energy and deployment of arrays will provide an opportunity to evaluate the potential impacts to the essential features and the species through the section 7 consultation process.

We considered the potential impacts of the construction and operation of energy production technologies including hydrokinetic on the dynamically distributed essential features of calving habitat and their selectability by right whales. In Unit 2, we concluded that the installation and operation of offshore energy development facilities are not likely to negatively impact the preferred ranges of sea surface roughness, sea surface temperatures, or water depths, in that it will not raise or lower the available value ranges for these features. However, installation and operation of these technologies may fragment large, continuous areas where the essential features are present. Additionally, installation and operation of these technologies may limit the availability of the essential features such that right whales are not able to select dynamic, optimal combinations of the features necessary for successful calving.

Comment 46: Multiple commenters stated that with regard to the installation of offshore wind energy facilities, the Biological Source Document discusses potential offshore wind energy projects only with regard to the possible adverse impacts on the essential features of calving habitat in Unit 2. One comment stated that the concerns and cautions raised for the installation of offshore wind energy facilities in calving grounds are also applicable to the installation of

these facilities in the northeast, and cited an application for a lease site in federal waters approximately 12 miles off of Portland, Maine. The commenter stated that so-called “floating” turbines such as are proposed for this project are anchored to the bottom by heavy cables that could, as discussed in the Biological Source Document for Unit 2, impede passage or disrupt current flows, possibly disrupting some of the physical features of this critical feeding habitat.

Additionally, installation and operation of these technologies may limit the availability of the essential features such that right whales are not able to select dynamic, optimal combinations of the features. This document also stated that “[l]arger whales may have difficulty passing through an energy facility with numerous, closely spaced mooring or transmission lines.”

Response: We disagree with the statement that special management considerations and protections associated with the potential impacts of offshore wind energy development on the essential features of calving habitat in Unit 2 are applicable in Unit 1. The special management considerations and protections associated with calving and foraging habitat are different, as are the routes of potential impacts, because the features are defined differently. We considered the potential impacts from the construction, operation, and decommissioning of wind farms on the essential physical and biological foraging features in Unit 1. We concluded there would be no impacts to the essential features.

The effects on passage and a whale’s ability to feed that the commenter suggested might be associated with the activity would constitute impacts on the species and not critical habitat features. On December 30, 2010, we completed a formal section 7 consultation on the proposed Cape Wind Energy Project. We concluded that all effects to whales from the proposed project were insignificant or discountable, and therefore the proposed action was not likely to adversely affect listed whales, including right whales.

While impacts to critical habitat were not considered for this project because there is none designated within the project's action area, the potential environmental impacts of the Cape Wind Energy Project were analyzed (DOE 2012). As part of the analysis, the potential impact associated with possible alterations to circulation patterns and currents were considered and determined to be negligible (DOE 2012). We believe that this would be the case in other future wind energy projects should they be proposed within Unit 1. Therefore, there would be no impacts to essential physical foraging features in Unit 1. Furthermore, we cannot currently identify any mechanisms by which the construction, operation or decommissioning of a wind energy project would affect the other essential foraging features we have identified in Unit 1.

However, future proposals for development of offshore wind facilities will provide an opportunity to evaluate the potential impacts to the essential features and the species through the section 7 consultation process.

Comment 47: One commenter stated that for both the Unit 1 and Unit 2 proposed designations, we summarily concluded that future special management measures may be needed to address possible, but uncertain, future consequences of climate change. The comment stated that, we did not identify any special management measures that may address those projected consequences. Because there is no support for the proposed climate change-related special management finding, the commenter recommended that we eliminate it in any final rule that is issued. The comment stated that critical habitat designations must be supported by a finding that the essential habitat features “may require special management considerations or protection[s].” 16 U.S.C. 1532(5)(A)(i)(II). The comment stated that any special management “methods or procedures” identified by the agency must be “useful in protecting physical and biological features of the environment for the conservation of listed species.” 50 CFR 424.02(j). The

comment stated that for both Unit 1 and Unit 2, we recited a number of possible future consequences that the agency believes may be related to climate change and then summarily concluded that future special management measures may be needed to address those possible, but uncertain, future consequences. The commenter stated that we did not speculate as to what type of special management measures (if any) may be needed with respect to projected climate change effects. The comment provided previous cases and legal standards that they believe support this recommendation, such as “Cape Hatteras Pres. Alliance, F. Supp. 2d at 124.”

Response: We disagree with this comment. A review of the decision in *Cape Hatteras Access Preservation Alliance v. U.S. Dep’t of the Interior et al.*, 344 F. Supp. 2d 108 (D.D.C., Nov. 1, 2004), reveals that the court remanded the critical habitat designation to the U.S Fish and Wildlife Service (FWS) because they failed to make a determination as to whether the essential features (“PCEs”) they identified in the designation of critical habitat may require special management considerations or protections. The ruling was not that FWS must make the determinations and also identify specific special management measures that may be needed with respect to possible future effects.

In the proposed rule, we identified specific routes, where possible by which we believe that the essential foraging and calving features could be impacted by climate change and thus why the features might require special management considerations or protections in the future (See pages 117-131 for Unit 1 essential features and pages 139-143 for Unit 2 in the Biological Source Document).

Comment 48: The commenter stated that one special management situation for Unit 1 that was not considered is a proposed increase in shellfish aquaculture. The commenter provided a specific example of a project under consideration on Jeffreys Ledge as being illustrative of this

particular concern and provided a number of potential impacts including the introduction of vertical lines and mooring and buoy lines into the water column. The commenter asserted that this type of facility might block free passage of whales or disrupt foraging behavior and increase entanglement risks. The commenter noted that there are proposals to site other facilities outside of the area in which the essential foraging features are found (*e.g.*, Nantucket Sound). The commenter stated that these activities have not been adequately considered by the agency with regard to potential threats to right whales and whether they may potentially disrupt foraging behavior to determine if special management considerations or protections are necessary.

Response: During the development of the proposed rule and the supporting documents (*e.g.*, Biological Source Document, Section 4(b)(2) Report), we conducted an in-depth and thorough analysis of the potential for a variety of activities to impact the essential features of foraging and calving habitat including offshore aquaculture. The potential impacts of the activities cited by the commenter were not identified as reasons the essential features may require special management, or as activities that would require section 7 consultation because they might adversely affect the essential features of foraging habitat. The introduction of vertical lines, mooring, and buoy lines into the water column associated with the development of offshore shellfish aquaculture may present an entanglement risk for large whales, including right whales, but is not a route of effects to the essential foraging features of the critical habitat. Thus, the agency would consider those impacts during a section 7 consultation to insure those activities are not likely to jeopardize the continued existence of North Atlantic right whales.

Comment 49: One commenter states that the proposed rule discusses several activities that may adversely affect essential physical or biological features and that require special management considerations or protection. The commenter stated that while they recognize that

it may be unrealistic to list all such activities, a more extensive discussion of the range of activities that may affect essential physical and biological features should be provided. The commenter states that for their recommended feature of “acoustic habitat necessary for whale communication or other essential whale behavior” we should note in the preamble that seismic airguns, pile driving, underwater detonations, military sonar, and vessel traffic could interfere with essential physical or biological features, prompting the need for special management considerations. With regard to feeding areas, it would be appropriate to note that activities that discharge contaminants, in addition to those already mentioned in the proposed rule, and could affect the reproduction or abundance of copepods, also may trigger special management action. Similarly, the placement of fishing or other lines in the water column that could interfere with right whale filter feeding or become caught in right whale baleen may need special management attention as well.

Response: The “special management considerations” that the commenter identifies apply to physical and biological features that the Marine Mammal Commission recommended be identified as essential right whale critical habitat features. We have considered their recommendations and have concluded that the features they propose are not appropriate for identification as such (see responses to comments 34, 35 and 36). Further, many of the activities that they identify and that they believe require special management are issues related to the takings of right whales, not impacts to essential features of critical habitat. The activities identified by the commenter would affect right whale individuals and not critical habitat itself. Therefore, these were not identified as part of the impact analysis as having the potential to affect the essential features.

Comment 50: One commenter stated that the impacts of overlapping North Atlantic right whale calves and wind farms off Southeast North Carolina has not been studied and should be added as a future management concern. This commenter further advocated that no marine wind energy construction be allowed until impacts on right whales are understood.

Response: We are also unaware of any studies that investigate the effects of wind farms on right whales, including calves. In the proposed rule and Biological Source Document, we identified wind farms (*i.e.* offshore energy development) as a reason the calving habitat essential features may require special management considerations or protection, given potential impacts on (1) the essential physical features of North Atlantic right whale calving habitat and (2) the contiguousness and selectability of the essential features. Construction and presence of large arrays of permanent structures may limit the availability of essential habitat features to calving right whales. Arrays of structures may also act as physical barriers and prevent or limit the ability of right whale mothers and calves to select dynamic combinations of the essential habitat features. Windfarms may also impact the contiguousness the physical habitat features essential for successful calving. By explicitly acknowledging these potential impacts to calving right whale critical habitat, we encourage Federal agencies and applicants whose actions may affect critical habitat features in these ways to consider and address these concerns to critical habitat in early planning of such activities.

Comment 51: BOEM commented that their Marine Minerals Program has a role in sand resources leasing to support identified U.S. Army Corps of Engineers actions. However, the proposed rule and ESA Section 4(b)(2) Report did not, but should, consider BOEM's administrative costs for these actions.

Response: In response to this comment, we modified the Section 4(b)(2) Report to reflect BOEM's sand leasing activities and administrative costs associated with section 7 consultations.

Comment 52: Several comments discussed the relationship between critical habitat and take avoidance measures implemented to protect the species during geological and geophysical activities. One commenter asked if protection measures would change to accommodate the change in critical habitat. Another commenter supported extending protection measures from the 1994-designated critical habitat area to the modified critical habitat. Finally, one commenter suggested considering the impact of oil spills from oil and gas activities off the Southeast U.S. coast on calves and lactating mothers.

Response: The ESA requires Federal agencies, in consultation with us, to ensure that “any action authorized, funded, or carried out” by the action agency is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of the species’ habitat (16 U.S.C. 1536(a)(2)). The purpose of the referenced protection measures is to avoid harm to right whales (the animals themselves). The purpose of consulting on critical habitat is to avoid destroying or adversely modifying critical habitat. We are not aware of how measures protecting the species from physical harm (*e.g.*, injury from vessel strike) would protect habitat essential features (*e.g.*, water depth in Unit 2); consequently, we do not anticipate the protection measures will change as the result of modification to critical habitat. However, protection measures may change as we all learn more about the North Atlantic right whales –including their distribution patterns. As far as oil spills, we would analyze those possible impacts to the animals during ESA section 7 consultations.

Comment 53: One commenter requested that we consider impacts associated with coastally-located industrial electric generators (*e.g.*, Pilgrim Nuclear Power Station, Seabrook

Nuclear power station, Mirant Canal Power Plant) as a cause for special management considerations or protections. The comment stated that the proposed critical habitat area includes the large embayments of Cape Cod Bay and Massachusetts Bay and deep underwater basins, incorporating state and federal waters from Maine through Massachusetts, but inshore waters were not considered. The commenter stated that over the last several years, there have been increasing concentrations of right whales in the western portion of Cape Cod Bay, including inshore areas off the shore of Plymouth, MA. The commenter recommended that we consider including these inshore areas where high concentrations of right whales have been sighted. The commenter also stated that there may be cumulative impacts to copepods or other foraging habitat features due to industrial electric generators operating on the shoreline, such as Entergy's Pilgrim Nuclear Power Station (PNPS) on the shore of Cape Cod Bay (Plymouth, MA), Seabrook Station Nuclear Power Plant (SBNPP) (Seabrook, NH), and Mirant Canal Power Plant (MCP) (Sandwich, MA). The commenter stated that negative impacts include entrainment of copepods and other planktonic species, as well as chemical, thermal and radioactive discharges occurring in important foraging areas. The comment stated that this issue should be included as a cause for special management considerations or protections.

Response: We agree that in recent years there has been an increase in the concentration of right whales in Western Cape Cod Bay, which has been included in this critical habitat designation. We have conducted informal consultations for the relicensing of the named power plants. The consultations concluded that the relicensing and continued operation of the power plants was not likely to adversely affect any NMFS ESA-listed species under our jurisdiction and would be extremely unlikely to adversely affect right whale critical habitat as it was designated at the time.

The best available scientific information, derived from recent modeling, indicates that population level effects of zooplankton/copepods removal due to entrainment in liquefied natural gas (LNG) operations involving water withdrawals would be so minor that the change would be indistinguishable from natural variability (NMFS 2007, Robert Kenney in October 11, 2011, letter to NMFS). While some copepods are likely lost to entrainment at Pilgrim each year, approximately 85% of entrained zooplankton are believed to survive. As such, the essential feature of dense aggregations of late stage *C. finmarchicus* does not require special management considerations or protection due to entrainment by the PNPS, SBNPP or MCPP.

Comment 54: One commenter questioned how critical habitat designation will impact the efficiency and overall processes for future ESA consultations for BOEM's three programs of Oil and Gas, Renewable Energy, and Marine Minerals.

Response: The impacts of designating critical habitat on BOEM's programs are considered in the Economic Impacts section of the proposed rule and accompanying ESA Section 4(b)(2) Report. How the critical habitat designation will affect the efficiency and overall process for future ESA consultations is contingent upon whether BOEM's particular proposed activity has the potential to adversely affect essential features in Unit 2, and on the project scope, and routes of effects. For BOEM's renewable energy programs only, we concluded proposed actions will more likely affect the essential features of critical habitat than the species in Unit 2. However, because there are no records in our consultation history for offshore renewable or alternative energy projects occurring within Unit 2, we are unable to (a) predict how many section 7 consultations may result from projects of this type or (b) calculate the projected incremental costs resulting from this action. Ultimately, proposed projects will have to be

analyzed on a case-by-case basis and we encourage BOEM to coordinate with us early in the project development phase.

Comment 55: We received a number of comments from BOEM regarding Atlantic geological and geophysical (seismic) activities in Unit 2. Comments included: a request to identify and address effects of Geological and Geophysical Data Acquisition on critical habitat or further offshore; an inquiry as to whether the revised critical habitat would affect existing mitigation measures that are tied to existing critical habitat or require additional protection measures for the species (BOEM stated that additional measures were required in recent consultations on Navy dredging and disposal activities within the 1994-designated critical habitat); information on and examples of possible special considerations or protections that may be required as the result of changes to critical habitat was requested.

Response: We are not aware of any routes of impact concerning seismic activity that would potentially create adverse effects on the essential features of Unit 2 of North Atlantic right whale critical habitat – *i.e.*, the physical features of sea surface conditions or temperature, or water depths, or their selectability over large contiguous areas. Consequently, we believe that seismic activities are more likely to affect the species in Unit 2 than the physical features of critical habitat. As far as the effects of seismic activity on the species, we would analyze those possible impacts to the animals during ESA section 7 consultations.

Comment 56: BOEM requested that the administrative costs associated with the changes in critical habitat be captured in the Section 4(b)(2) Report for BOEM's three program areas: marine minerals, renewable energy, and oil and gas. BOEM commented that possible additional protections and special considerations resulting from the modified critical habitat were not included in the analysis estimating BOEM's costs for future renewable energy programs. BOEM

believes \$5,080 per action underestimates BOEM's true administrative cost so the Section 4(b)(2) Report should be revised.

Response: As mentioned in the Economic Impacts section of the proposed rule (80 FR 9314, February 20, 2015), we are unable to quantify the number of potential future consultations and thus the annualized incremental administrative costs associated with renewable energy activities in the calving area. The reason for this is that these are future activities for which there is no past consultation history, and we received a correspondence from BOEM that stated they have no specific or planned project proposals. We disagree that \$5,080 per action underestimates true incremental administrative costs for consultations on impacts to critical habitat that will be required as a result of this rulemaking. We used costs for consultations developed by Industrial Economics, Inc. (IEc 2014). The administrative costs associated with critical habitat consultations are low because they represent the incremental costs of adding critical habitat analyses to consultations that would be required to address potential impacts to the species. The costs of consultation that would occur even in the absence of critical habitat are not incremental costs of this designation.

Comment 57: One commenter stated although the 4(b)(2) Report correctly recognizes the potential for oil and gas exploration and development in Units 1 and 2, we incorrectly assume that project modifications associated with critical habitat may occur in Unit 1 but not in Unit 2 for these activities. However, project modifications have already been proposed in Unit 2 for currently proposed actions that are solely attributable to right whale critical habitat. For example, the Bureau of Ocean Energy Management's Record of Decision for the Atlantic OCS Proposed Geological and Geophysical Activities Mid-Atlantic and South Atlantic Planning Areas, Final Environmental Impact Statement recommends an expansion of the time-area closure applicable

to right whale critical habitat to a continuous 37 km wide zone and includes protective restrictions. None of the costs associated with these restrictions are identified in the Report and consequently the Report underestimates critical habitat related costs for oil and gas activities in Unit 2.

Response: We do not agree that the Section 4(b)(2) Report should be updated to recognize potential project modifications to oil and gas exploration and development activities in Units 2. The BOEM Record of Decision (ROD) for the Atlantic OCS Proposed Geological and Geophysical Activities Mid-Atlantic and South Atlantic Planning Areas, Final Environmental Impact Statement (FEIS) contains mitigation measures intended to avoid or minimize effects to right whales themselves (and other environmental impacts) related to oil and gas geological and geophysical (G&G) activities and other proposed G&G activities throughout the Mid- and South Atlantic Planning areas. These mitigation measures include guidance for ship strike avoidance, mitigation measures for seismic airgun surveys and mitigation measures for high resolution geophysical (HRG) surveys. The mitigation measures are not intended to provide protection measures for critical habitat features but are intended to reduce the risk of acoustic and vessel strike impacts to North Atlantic right whales. Based on our 4(b)(2) impact analysis, we have not identified any routes of effects for acoustic impacts to the essential calving features. Any costs associated with the implementation of such G&G mitigation measures are not attributable to the designation of right whale critical habitat. As such, the Section 4(b)(2) Report does not underestimate critical habitat-related costs for oil and gas activities in Unit 2.

Fishing and Critical Habitat

Comment 58: Several commenters noted that while the proposed rule does not include any new restrictions for commercial fishing commenters are concerned about the waters being

proposed for designation. The commenters stated that while we have determined “current fishing practices and techniques will not affect the essential foraging features” and we do not anticipate “fishery related activities that would trigger consultation on the basis of critical habitat designation,” commenters feel it is not a guarantee. The commenters could not support a formal designation with the potential to negatively impact fishermen without concrete scientific evidence of its need.

Response: As part of its impact analysis, we concluded that commercial fishing activities, as currently conducted, are not expected to affect the essential features of right whale foraging habitat with the exception of a potential future directed copepod fishery. Gear restrictions currently in place to protect large whales, including right whales, were established by the regulations implementing the Marine Mammal Protection Act’s Atlantic Large Whale Take Reduction Plan. Changes to gear restrictions are beyond the scope of this rulemaking to designate critical habitat under the ESA. The Atlantic Large Whale Take Reduction Team process is the proper venue to consider the adequacy of gear restrictions. Consequently, we are not making any changes to the current gear restrictions as part of this critical habitat rule.

Comment 59: One commenter stated that Maine’s lobster industry has been engaged in the Take Reduction Team process since its inception and fishermen have worked diligently over nearly two decades to implement changes in fishing practices to aid in the recovery of right whales. The commenter questioned the potential impact of new federal regulations on fishermen and doubted that the proposed designation area reflects a balanced review of the best available science, nor does it properly consider the economic impacts that will result from using an arbitrarily drawn critical habitat area that fails to exclude all areas that are not essential for conservation and recovery of the species.

Response: We have identified the areas on which are found the physical and biological features which are essential to the conservation of the species and which may require special management considerations or protections as required by the ESA. The boundaries of the proposed critical habitat encompass the essential foraging and calving features. In identifying the essential calving and foraging features and considering the economic impacts of the designation, we have used the best available data and information. See also Response to Comment 58 regarding commercial fishing.

Comment 60: Multiple commenters stated that while they support the concept of expanding the existing critical habitat areas where essential to the conservation and recovery of the right whale, this support for the proposed expansion is predicated on our finding in the Section 4(b)(2) Report that neither commercial nor recreational fishery-related activities are expected to affect the essential features of right whale foraging habitat with the exception of a directed copepod fishery.

Response: See response to Comment 58.

Other Comments

Comment 61: Several organizations commented that we should not exclude areas from critical habitat based on economic or other impacts.

Response: As required by section 4(b)(2) of the ESA, we considered the economic, national security, and any other relevant impact, of specifying any particular area as critical habitat. Section 4(b)(2) allows, but does not require, us to consider excluding a particular area from a designation, but only if the benefits of excluding that area outweigh the benefits of including it in the designation, and if the exclusion will not result in extinction of the species. We considered the economic impacts of specifying North Atlantic critical habitat; however, based on

those considerations, we are not exercising our discretion to exclude any areas from the designation.

Comment 62: One commenter stated that we can exclude any area where the costs of designation, including economic impacts, outweigh the conservation or economic benefits of designation. Such exclusions avoid unnecessarily burdening economic activity and designating areas as critical habitat where there is little or no benefit in doing so. The comment further stated that the ESA does not require us, in making section 4(b)(2) decisions, to limit our analysis to only those economic impacts that are certain and quantifiable. Instead, the economic analysis is a reasoned projection of what human activities may happen in the future and the economic impacts that the designation may have on those future activities.

Response: See response to Comment 61.

Comment 63: Several commenters noted that they supported our determinations not to designate a migratory corridor or breeding areas as critical habitat or to designate unoccupied areas as critical habitat.

Response: We acknowledge these comments.

Comment 64: One commenter was concerned about possible impacts of the proposed critical habitat designation on ferry service in the coastal waters and islands of Maine, New Hampshire and Boston Harbor/Massachusetts Bay that are served by existing or likely ferry routes. The commenter recommended that the Secretary exercise her discretion under section 4(b)(2) of the Endangered Species Act and exclude coastal ferry routes from the critical habitat designation. The commenter stated that they believe that the expansion of critical habitat in the coastal waters of Unit 1 will lead to proposals to expand or create seasonal management areas with mandatory speed limits. The commenter expressed concern that we did not evaluate the

potential economic impact of the proposed designation on ferry operators, the majority of whom are classified as small businesses or entities under the criteria of the U.S. Small Business Administration. The commenter noted they recognize that the critical habitat designation alone will impose no direct or immediate burden or impact on the ferry systems.

Response: We do not believe that the normal transit of coastal ferries through areas designated as critical habitat will have any impact on the essential foraging features present in Unit 1 waters of the Gulf of Maine and Georges Bank. We have concluded that transiting vessels, whether military, civilian, or commercial do not impact the essential foraging features of critical habitat. Furthermore, we are not aware of a federal nexus regarding routine operation of the ferries such that this activity would be subject to the federal consultation requirements of section 7 of the ESA. Therefore, there will be no impact to the operation of ferries as a result of the designation of critical habitat and as such, no impacts to these small business entities. Under the ship speed rule (73 FR 6017, December 10, 2008), vessels greater than 65' in length are required to not exceed 10 knots seasonally in certain locations covered by seasonal management areas (SMAs) or are recommended to maintain speeds of 10 knots or less in dynamic management areas in certain times and locations. These measures are in place to reduce the risk of serious injury and mortality to right whales due to ship strikes.

Beyond the Scope of this Action

Comment 65: One commenter stated that we failed to mention the potential impacts of noise on right whale mothers and calves and their need to stay together during the calving and nursing season. The need for “noise levels to remain below those that would cause abandonment of critical habitat” has previously been recognized by us in our designation of critical habitat for other sound dependent marine mammals. This commenter cited our designation of critical

habitat for Cook Inlet Beluga Whale. The commenter also stated that activities, such as seismic airguns, pile driving, underwater detonations, military sonar, and vessel traffic, could alter the acoustic habitat necessary for whale communication and interfere with the use of calving habitat; and therefore, sound qualifies as an essential feature that may require special management considerations.

Response: As stated in the **Federal Register** Notice of Proposed Rulemaking for Cook Inlet Beluga Whale Critical Habitat (74 FR 63080, December 2, 2009), beluga whales are known to be among the most adept users of sound of all marine mammals, using sound rather than sight for many important functions, especially in the highly turbid waters of upper Cook Inlet. Beluga whales use sound to communicate, locate prey, and navigate, and may make different sounds in response to different stimuli. Beluga whales produce high frequency sounds which they use as a type of sonar for finding and pursuing prey. For these, and other reasons, we consider “quiet” areas in which noise levels do not interfere with important life history functions and behavior of these whales to be an essential feature of Cook Inlet Beluga Whale critical habitat.

In contrast, in our final rule to designate critical habitat for the southern resident killer whale, we discussed the lack of sufficient information to include noise as an essential feature, but noted that we would continue to consider sound in any future revisions of that critical habitat (71 FR 69054, November 29, 2006). In that rule, we acknowledged the many observations about the potential for sound to startle or even physically injure killer whales. These effects, however, are direct effects to the animal itself and not to its habitat.

Physical and biological features that are identified as essential to the conservation of a species vary among species. Similar to southern resident killer whales, we lack sufficient information to include noise as an essential feature for North Atlantic right whale calving area

critical habitat. Unlike the other physical features identified as essential to the conservation of right whales because they facilitate successful calving, we are not aware of any information on acoustic thresholds that facilitate successful calving in right whales or other baleen whales. However, the agency has conducted and will continue to conduct ESA section 7 consultations on noise impacts of construction and geologic and geophysical exploration activities, and in completed consultations, measures have been included to avoid direct impacts to the whales as a consequence of noise associated with the proposed activities.

Comment 66: One commenter recommended that the agency expand Seasonal Management Areas that reduce ship strikes to include all portions of the proposed critical habitat in the northeast and critical habitat in the mid-Atlantic migratory corridor out to 30 nm as well as areas in the Southeast Atlantic.

Response: The commenters assertion that the SMA boundaries be reconfigured and extended out to 30 nautical miles from shore are beyond the scope of this rulemaking as the SMA rulemaking was concerning risk reduction to large whale interactions directly with North Atlantic right whales not its habitat. The purpose of the Seasonal Management Area (SMA) program is to promote direct protection to North Atlantic right whales by reducing the likelihood of death and serious injury that may result from collisions with ships. The SMA boundaries were based on right whale sightings not the presence of physical and biological features associated with right whale migration. The SMA program is not intended to provide protections to the essential features of right whale critical habitat.

Comment 67: A commenter stated that the right whale population data used to support the proposed designation is not based on the best available science. The commenter noted the discrepancy between the North Atlantic Right Whale Consortium's 2012 and 2014 Right Whale

Report Cards, which indicated that the population was at least 509 and 522 whales, respectively; and the 450 population number referenced by us. The commenter stated that we should amend our rule to reflect this best available science.

Response: The current abundance of North Atlantic right whales is not directly relevant to designating critical habitat, and we disagree with the assertion that we did not rely on the best available science when determining which areas meet the definition of critical habitat under the ESA. Furthermore, although not relevant to this rulemaking, we offer the following explanation of the differing abundance estimates cited by the commenter. The estimates provided in the North Atlantic Right Whale Consortium's reports state, "This 'best estimate' is based upon the number of photographed whales, but it excludes potential unphotographed whales, and therefore, should not be considered a 'population estimate.'" Therefore, it is not considered to be an appropriate estimate to use for right whale abundance. However, the Marine Mammal Protection Act requires that we use the minimum population estimate to ensure a more precautionary, conservative approach in the management of the marine mammal species. The 2014 Final NMFS Marine Mammal Stock Assessment Report (SARs) indicates 465 individually recognized North Atlantic right whales were known to be alive in 2011 (Waring *et al.* 2015) - this is a direct count, represents a minimum population size, is peer-reviewed, published, and is considered the best available science. We are required to use the minimum population developed by the NOAA Fisheries Northeast Fisheries Science Center for the annual Marine Mammal Stock Assessment Reports in our management actions.

Comment 68: One commenter expressed concerns about the lack of regulation in Canadian waters, noting that, right whales traverse international borders and yet there has been

no effort made to establish uniform regulations across U.S. and Canadian waters. The commenter also appreciated our caution in not designating a mating habitat area.

Response: As stated in the proposed rule, we are not authorized to designate critical habitat outside of U.S. jurisdiction. However, we acknowledge the commenter's view concerning the non-designation of a critical habitat associated with mating, and we will continue to work with our Canadian counterparts to coordinate and implement measures necessary to promote the conservation and recovery of protected species including the North Atlantic right whale.

Comment 69: One commenter recommended that right whales be protected from gear entanglement through expanded SMAs and expanding entanglement regulations to encourage the use of gear innovations such as sinking or neutrally buoyant line to reduce and prevent entanglement and to promote science based catch quotas.

Response: The commenter's suggestion is beyond the scope of this rulemaking (see response to Comment 58).

Comment 70: A number of commenters expressed concerns about seismic exploration for oil and gas in proposed critical habitat. Concerns for right whales included: habitat displacement, injuries, mortalities, behavioral disruption, acoustic masking, increase in noise pollution (particularly as climate change impacts increase), and impacts to reproduction and survival. One commenter suggested that oil and gas rigs may act as a type of barrier similar to types of barriers we identify with regard to other activities. One commenter stated that oil and gas activities may require management considerations similar to the installation and operation of offshore energy development facilities. Seismic testing, drilling, vessel traffic, construction of infrastructure, and industrialization of the coast may fragment large, contiguous areas containing

the optimum ranges of all essential features that are necessary for right whale calving and rearing.

Response: In the Biological Source Document and Section 4(b)(2) Report, we concluded that future potential oil and gas leasing development was one of the reasons the essential features may require special management considerations or protection in Unit 1. However, we do not anticipate oil and gas rig construction in Unit 2, because BOEM presently implements a 50-mile no-leasing buffer from the coastline for oil and gas leasing off Georgia and South and North Carolina. That buffer is being proposed for the year 2017 through 2022. No oil and gas leases off Florida are planned through 2022. We have clarified that in the final Section 4(b)(2) Report and Biological Source Document. We will work with BOEM to determine whether any of the activities listed by the commenters and proposed or authorized by BOEM may affect right whales (or any other listed species under our purview) or may affect right whale critical habitat, and thus require section 7 consultation.

Comment 71: One commenter recommended that right whales be protected from proposed oil and gas exploration and development in the Atlantic Ocean through rules that prevent or limit the seismic airgun activity.

Response: See response to comment 49. Based on our analysis of past and potential future activities that may affect critical habitat, we identified a number of activities with the potential to affect the essential features of right whale critical habitat. Seismic airguns were not identified as having the potential to impact right whale critical habitat. The effects of any oil and gas exploration activities and their potential to impact right whales as well as critical habitat will be analyzed in section 7 consultations.

Information Quality Act and Peer Review

The data and analyses supporting this designation have undergone a pre-dissemination review and have been determined to be in compliance with applicable information quality guidelines implementing the Information Quality Act (IQA) (Section 515 of Pub. L. 106-554). In December 2004, the Office of Management and Budget (OMB) issued a Final Information Quality Bulletin for Peer Review pursuant to the IQA. The Bulletin established minimum peer review standards, a transparent process for public disclosure of peer review planning, and opportunities for public participation with regard to certain types of information disseminated by the Federal Government. The peer review requirements of the OMB Bulletin apply to influential or highly influential scientific information disseminated on or after June 16, 2005. To satisfy our requirements under the OMB Bulletin, we obtained independent peer review of the Biological Source Document and Section 4(b)(2) Impacts Report that support the designation of critical habitat for the North Atlantic right whale, and we incorporated the peer review comments prior to publishing the proposed rule. The final peer review report is available along with all materials related to the peer review on the agency's website at:

http://www.cio.noaa.gov/services_programs/prplans/ID259.html. The majority of the peer review comments were editorial in nature, and no substantive comments were received. For additional information on the specific comments received please see the website identified above.

Changes from Proposed Rule

We are making one change from the proposed rule to the areas designated as right whale critical habitat. The one change is based on public comments received and further review of the best available scientific data. We are extending Unit 2 further to the south to include an area that is a portion of the critical habitat designated in 1994, expanding the area south and increasing

Unit 2 by approximately 341 nm². Unit 2 now includes nearshore and offshore waters of the southeastern U.S., extending from Cape Fear, North Carolina south to approximately 27 nm below Cape Canaveral, Florida.

In addition to this change, we corrected an inadvertent omission of coordinates by which we have determined that following inshore waters associated with the harbors of Sandwich, Scorton and Barnstable should be excluded from the proposed critical habitat area of Unit 1. We also corrected a few omissions from the Section 4(b)(2) report, based on input from commenters.

Critical Habitat Identification and Designation

Critical habitat is defined by section 3 of the ESA as (1) the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features (a) essential to the conservation of the species and (b) which may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination by the Secretary that such areas are essential for the conservation of the species.

Geographical Areas Occupied by the Species

"Geographical areas occupied" in the definition of critical habitat is interpreted to mean the entire range of the species at the time it was listed, inclusive of all areas they use and move through seasonally (45 FR 13011, February 27, 1980). Prior to extensive exploitation, the North Atlantic right whale occurred in temperate, subarctic, coastal and continental shelf waters throughout the North Atlantic Ocean rim (Perry *et al.* 1999). Considerable sightings data document the use of areas in the western North Atlantic Ocean where right whales presently occur. The current known distribution of North Atlantic right whales is largely limited to the western North Atlantic Ocean. In the western North Atlantic, right whales migrate along the

North American coast between areas as far south as Florida, and northward to the Gulf of Maine, the Bay of Fundy, the Gulf of St. Lawrence and the Scotian shelf, extending to the waters of Greenland and Iceland (Waring *et al.* 2011).

Right whales have also been rarely observed in the Gulf of Mexico. The few published sightings (Moore and Clark 1963; Schmidly and Melcher 1974; Ward-Geiger *et al.* 2011) represent either geographic anomalies or a more extensive historic range beyond the sole known calving and wintering ground in the waters of the southeastern United States (Waring *et al.* 2009). Therefore, the Gulf of Mexico is not considered part of the geographical area occupied by the species “at the time it was listed.”

Our regulations at 50 CFR 424.12(h) state: "Critical habitat shall not be designated within foreign countries or in other areas outside of United States jurisdiction." Although North Atlantic right whales have been sighted in coastal waters of Canada, Greenland, Iceland, and Norway, these areas cannot be considered for designation. The geographical area occupied by listed North Atlantic right whales that is within the jurisdiction of the United States is therefore limited to waters off the U.S. east coast between Maine and Florida, seaward to the boundary of the U.S. Exclusive Economic Zone.

Physical or Biological Features Essential for Conservation of the Species

Within the geographical area occupied, critical habitat consists of specific areas on which those physical or biological features essential to the conservation of the species are found (hereafter referred to as “essential features”) and that may require special management considerations or protection. Section 3 of the ESA (16 U.S.C. 1532(3)) defines the terms "conserve," "conserving," and "conservation" in part to mean: "To use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the

point at which the measures provided pursuant to this chapter are no longer necessary." Further, our regulations at 50 CFR 424.12(b) for designating critical habitat state that physical and biological features that are essential to the conservation of a given species and that may require special management considerations or protection may include: (1) space for individual and population growth and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal, and generally; (5) habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

As noted previously, we produced a Biological Source Document (NMFS 2015a) that discusses our application of the ESA's definition of critical habitat for right whales in detail. When defining critical habitat for right whales, we considered the physical and/or biological features of foraging and calving habitats. The features of right whale foraging habitat that are essential to the conservation of the North Atlantic right whale are a combination of the following biological and physical oceanographic features:

(1) The physical oceanographic conditions and structures of the Gulf of Maine and Georges Bank region that combine to distribute and aggregate *C. finmarchicus* for right whale foraging, namely prevailing currents and circulation patterns, bathymetric features (basins, banks, and channels), oceanic fronts, density gradients, and temperature regimes;

(2) Low flow velocities in Jordan, Wilkinson, and Georges Basins that allow diapausing *C. finmarchicus* to aggregate passively below the convective layer so that the copepods are retained in the basins;

(3) Late stage *C. finmarchicus* in dense aggregations in the Gulf of Maine and Georges Bank

region; and

(4) Diapausing *C. finmarchicus* in aggregations in the Gulf of Maine and Georges Bank region.

The physical and biological features of right whale calving habitat that are essential to the conservation of the North Atlantic right whale are: (1) calm sea surface conditions of Force 4 or less on the Beaufort Wind Scale; (2) sea surface temperatures from a minimum of 7°C, and never more than 17°C; and (3) water depths of 6 to 28 meters, where these features simultaneously co-occur over contiguous areas of at least 231 nm² of ocean waters during the months of November through April. When these features are available, they are selected by right whale cows and calves in dynamic combinations that are suitable for calving, nursing, and rearing, and which vary, within the ranges specified, depending on factors such as weather and age of the calves.

Beyond the uncertainty over the location of one or more migratory corridors, we cannot currently identify any specific physical or biological features that define migratory habitat. Therefore, we have concluded that it is not currently possible to define critical habitat associated with right whale migratory behaviors.

Large-scale migratory movements between feeding habitat in the northeast and calving habitat in the southeast are a necessary component in the life history of the North Atlantic right whale. A proportion of the population makes this migration annually, and the most valuable life-history stage (calving females) must make this migration for successful reproduction. The subset of the North Atlantic right whale population that has been observed migrating between the northern feeding grounds and southern calving grounds is comprised disproportionately of reproductively mature females, pregnant females, juveniles, and young calves (Ward-Geiger *et al.* 2005; Fujiwara and Caswell 2001; Kraus *et al.* 1986, as cited by Firestone *et al.* 2008). For

logistical reasons, survey efforts have also been disproportionally focused in the nearshore area (within 30 nm of shore). The Biological Source Document (NMFS 2015a) contains a thorough discussion of the available data we considered in our analysis.

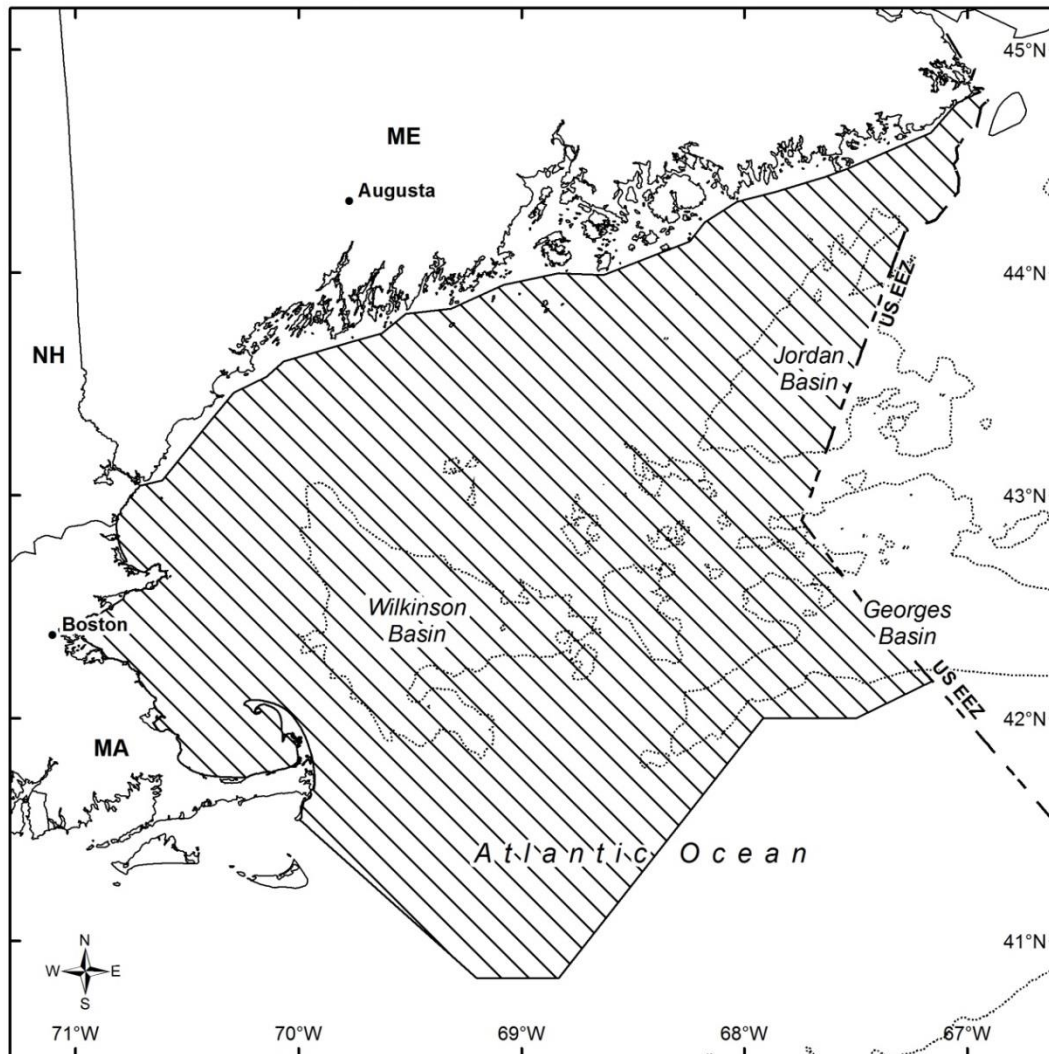
Likewise, we have concluded that it is not possible to identify essential physical or biological features related to breeding habitat, primarily because we cannot identify areas where breeding occurs. Right whales are known to aggregate in large groups known as Surface Active Groups (SAGs). While indicative of courtship and reproductive behavior, not all SAGs are reproductive in nature (Kraus *et al.* 2007). SAGs are observed year round, both in the northeast feeding areas as well as in the southeast calving grounds. SAGS are usually observed opportunistically during directed survey efforts as well as other random sightings.



Specific Areas within the Geographical Area Occupied by the Species

The definition of critical habitat instructs us to identify specific areas on which the physical or biological features essential to the species' conservation are found. Our regulations state that critical habitat will be defined by specific limits using reference points and lines on standard topographic maps of the area, and referencing each area by the state, county, or other local governmental unit in which it is located (50 CFR 424.12(c)). Our regulations also state that when several habitats, each satisfying requirements for designation as critical habitat, are located in proximity to one another, an inclusive area may be designated as critical habitat (50 CFR 424.12(d)). We identified two “specific areas” within the geographical area occupied by the species, at the time of listing, that contain the essential features for right whale foraging and calving habitat.

North Atlantic Right Whale Critical Habitat Northeastern U.S. Foraging Area

Unit 1



 Critical Habitat
 200m Depth Contour

This map is provided for illustrative purposes only of North Atlantic right whale critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.

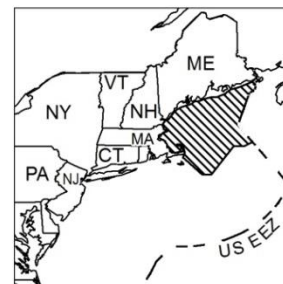


Figure 1. The specific area on which the essential features of North Atlantic right whale foraging habitat are found.

Consistent with our regulations (50 CFR 424.12(c)), we have identified one “specific area” within the geographical area occupied by the species at the time of listing, that contains the identified physical and biological features of foraging habitat that are essential to the conservation of North Atlantic right whales. This encompasses a large area within the Gulf of Maine and Georges Bank region, including the large embayments of Cape Cod Bay and Massachusetts Bay and deep underwater basins. This area also incorporates state waters, except for inshore areas, bays, harbors, and inlets, from Maine through Massachusetts in addition to federal waters.

The specific area on which the physical and biological features essential to foraging and thus to the conservation of the North Atlantic right whale are found includes all waters, seaward of the boundary depicted in Figure 1 (see below for actual coordinates). The boundary of the critical habitat for Unit 1 is delineated generally by a line connecting the geographic coordinates and landmarks as follows: from the southern tip of Monomoy Island (Cape Cod)(41° 38.39' N, 69° 57.32' W) extending southeasterly to 40° 50' N, 69° 12' W (the Great South Channel), then east to 40° 50' N 68° 50' W. From this point, the boundary extends northeasterly direction to 42° 00' N, 67° 55' W and then in an easterly direction to 42° 00' N 67° 30' W. From this point, the boundary extends northeast along the northern edge of Georges Bank to the intersection of the U.S.-Canada maritime boundary at 42° 10' N, 67° 09.38' W. The boundary then follows the U.S.-Canada maritime boundary north to the intersection of 44° 49.727' N, 66° 57.952' W. From this point, moving southwest along the coast of Maine, the specific area is located seaward of the Maine exemption line developed as part of the Atlantic Large Whale Take Reduction Plan to the point (43° 02.55' N, 70° 43.33' W) on the coast of New Hampshire south of Portsmouth, NH. The boundary of the area then follows the coastline southward along the coasts of New Hampshire

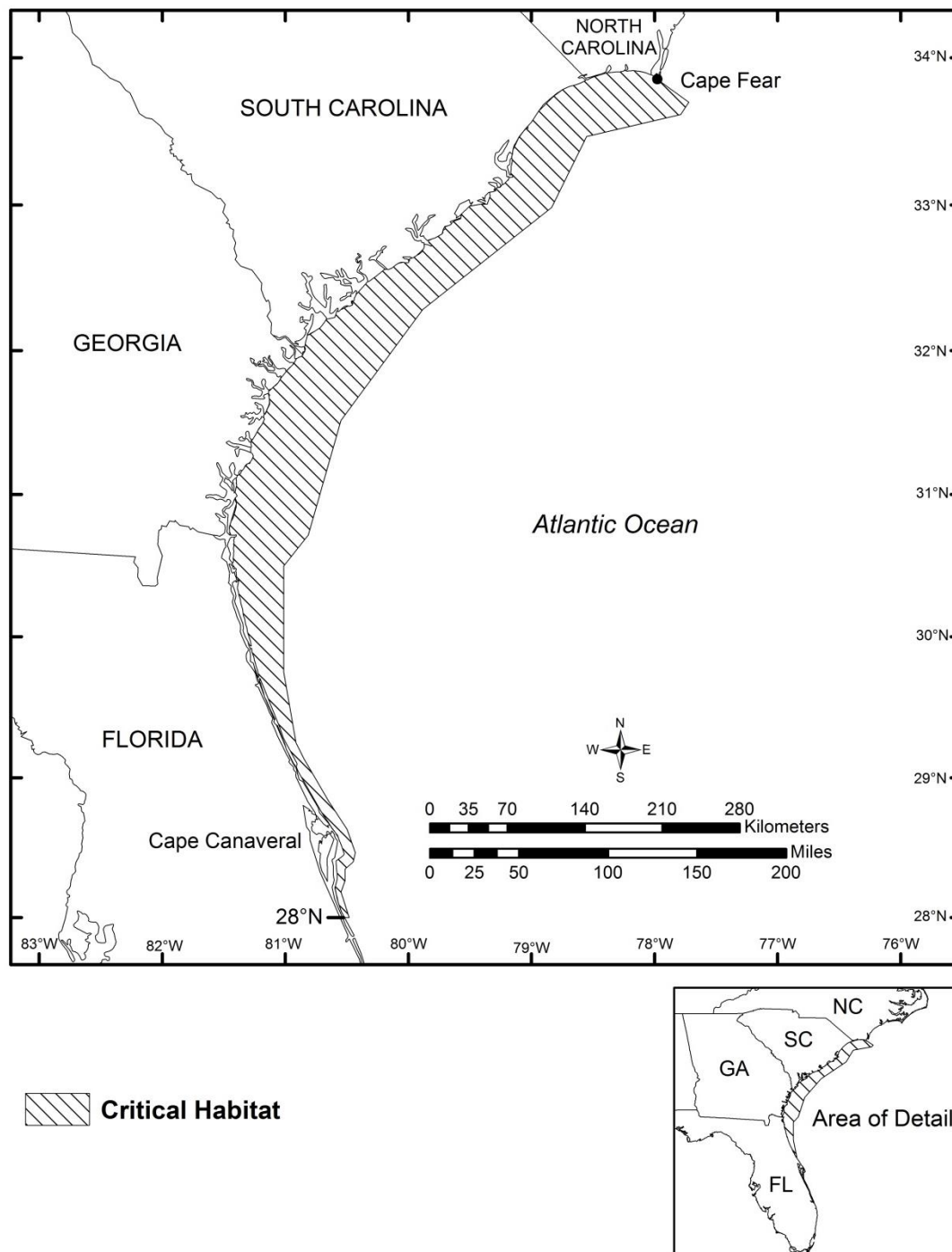
and Massachusetts along Cape Cod to Provincetown southward along the eastern edge of Cape Cod to the southern tip of Monomoy Island. As noted, the specific area includes the large embayments of Cape Cod Bay and Massachusetts Bay but does not include inshore areas, bays, harbors and inlets. In addition, the specific area does not include waters landward of the 72 COLREGS lines (33 CFR part 80) as described below.

The second “specific area” we identified contains the essential features identified for North Atlantic right whale calving. The southeast right whale calving area consists of all marine waters from Cape Fear, North Carolina, southward to approximately 27 nm below Cape Canaveral, Florida, within the area bounded on the west by the shoreline and the 72 COLREGS lines, and on the east by rhumb lines connecting the specific points described below.

Based on the prior discussion and consistent with our regulations (50 CFR 424.12(d)), we identified one “specific area” within the geographical area occupied by the species, at the time of listing, that contains the essential features for calving right whales in the southeastern U.S (Figure 2). This area comprises waters of Brunswick County, North Carolina; Horry, Georgetown, Charleston, Colleton, Beaufort, and Jasper Counties, South Carolina; Chatham, Bryan, Liberty, McIntosh, Glynn, and Camden Counties, Georgia; and Nassau, Duval, St. John's, Flagler, Volusia, and Brevard Counties, Florida.

**North Atlantic Right Whale Critical Habitat
Southeastern U.S. Calving Area**

Unit 2



This map is provided for illustrative purposes only of North Atlantic right whale critical habitat.
For the precise legal definition of critical habitat, please refer to the narrative description.

Figure 2. Area designated as North Atlantic right whale southeastern calving critical habitat.

Special Management Considerations or Protection

Specific areas within the geographical area occupied by a species may be designated as critical habitat only if they contain physical or biological features that "may require special management considerations or protection." To meet the definition of critical habitat, it is not necessary that the features currently require special management considerations or protection, only that they *may require* special management considerations or protections. Our regulations define "special management considerations or protections" to mean "any methods or procedures useful in protecting physical and biological features of the environment for the conservation of listed species" (50 CFR 424.02(j)). As noted previously, we produced a Biological Source Document (NMFS 2015a) that discusses our application of the ESA's definition of critical habitat for right whales in detail, including evaluation of whether essential features "may require special management considerations or protections."

As summarized in the Biological Source Document (NMFS 2015a), the essential features of right whale foraging habitat may require special management considerations or protections because of possible negative impacts from the following activities and events: (1) zooplankton fisheries, (2) effluent discharge from municipal outfalls, (3) discharges and spills of petroleum products to the marine environment as a result of oil and gas exploration, development and transportation, and (4) climate change.

The essential features of right whale calving habitat may require special management considerations or protections because of possible negative impacts from the following activities and events: offshore energy development, large-scale offshore aquaculture operations, and global climate change. These activities and their potential broad-scale impacts on the essential features are discussed in detail in the Biological Source Document (NMFS 2015a).

Unoccupied Areas

ESA section 3(5)(A)(ii) defines critical habitat to include specific areas outside the geographical area occupied if the areas are determined by the Secretary to be essential for the conservation of the species. Regulations at 50 CFR 424.12(e) specify that we shall designate as critical habitat areas outside the geographical area presently occupied by a species only when a designation limited to its present range would be inadequate to ensure the conservation of the species. Our regulations at 50 CFR 424.12(h) also state: "Critical habitat shall not be designated within foreign countries or in other areas outside of United States jurisdiction." At the present time, the geographical area occupied by listed North Atlantic right whales which is within the jurisdiction of the United States is limited to waters off the U.S. east coast from Maine through Florida, seaward to the boundary of the U.S. Exclusive Economic Zone. As discussed previously, the Gulf of Mexico is not considered part of the geographical area occupied by the species, nor do we consider it an unoccupied area essential to the species' conservation given the infrequent use of the area by right whales in the past. We have not identified any other areas outside the geographical area occupied by the species that are essential for their conservation and therefore are not proposing to designate any unoccupied areas as critical habitat for the North Atlantic right whale.

Application of ESA Section 4(a)(3)(B)(i) (Military Lands)

Section 4(a)(3)(B)(i) prohibits designating as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense (DOD), or designated for its use, that are subject to an integrated natural resources management plan (INRMP), if we determine that such a plan provides a benefit to the species (16 U.S.C. 1533(a)(3)(B)).

No areas within the specific areas designated are covered by INRMPs. Therefore, there

are no military lands ineligible for designation as critical habitat within Unit 1 and Unit 2.

Application of ESA Section 4(b)(2)

The foregoing discussion described the specific areas within U.S. jurisdiction that fall within the ESA section 3(5) definition of critical habitat in that they contain the physical and biological features essential to the North Atlantic right whale's conservation that may require special management considerations or protection. Section 4(b)(2) of the ESA requires that we consider the economic impact, impact on national security, and any other relevant impact, of designating any particular area as critical habitat. Additionally, the Secretary has the discretion to consider excluding any area from critical habitat if she determines the benefits of exclusion (that is, avoiding some or all of the impacts that would result from designation) outweigh the benefits of designation based upon the best scientific and commercial data available. The Secretary may not exclude an area from designation if exclusion will result in the extinction of the species. Because the authority to exclude is discretionary, exclusion is not required for any particular area under any circumstances.

The following discussion of impacts summarizes the analysis contained in our ESA Section 4(b)(2) Report (NMFS 2015b), which identifies the economic, national security, and other relevant impacts that we projected would result from including each of the two specific areas in the critical habitat designation. We considered these impacts when deciding whether to exercise our discretion to propose excluding particular areas from the designation. Both positive and negative impacts were identified and considered (these terms are used interchangeably with benefits and costs, respectively). Impacts were evaluated in quantitative terms where feasible, but qualitative appraisals were used where that was more appropriate to particular impacts. The ESA Section 4(b)(2) Report (NMFS 2015b) is available on our website at

www.greateratlantic.fisheries.noaa.gov.

The primary impacts of a critical habitat designation result from the ESA section 7(a)(2) requirement that Federal agencies ensure their actions are not likely to result in the destruction or adverse modification of critical habitat, and that they consult with us in fulfilling this requirement. Determining these impacts is complicated by the fact that section 7(a)(2) also requires that Federal agencies ensure their actions are not likely to jeopardize the species' continued existence. One incremental impact of designation is the extent to which Federal agencies modify their proposed actions to ensure they are not likely to destroy or adversely modify the critical habitat beyond any modifications they would make because of listing and the jeopardy requirement. When the same modification would be required due to impacts to both the species and critical habitat, the impact of the designation is co-extensive with the ESA listing of the species (*i.e.*, attributable to both the listing of the species and the designation critical habitat). To the extent possible, our analysis identified impacts that were incremental to the designation of critical habitat -- meaning those impacts that are over and above impacts attributable to the species' listing or any other existing regulatory protections. Relevant, existing regulatory protections (including the species' listing) are referred to as the "baseline" and are also discussed in the Section 4(b)(2) Report.

The ESA Section 4(b)(2) Report describes the projected future federal activities that would trigger section 7 consultation requirements because they may affect the essential features, and consequently may result in economic costs or negative impacts. Additionally, the report describes broad categories of project modifications that may reduce impacts to the essential features, and states whether the modifications are likely to be solely a result of the critical habitat designation or co-extensive with another regulation, including the ESA listing of the species. The

report also identifies the potential national security and other relevant impacts that may arise due to the critical habitat designation, such as positive impacts that may arise from conservation of the species and its habitat, state and local protections that may be triggered as a result of designation, and education of the public to the importance of an area for species conservation.

Economic Impacts

Economic impacts of the critical habitat designation result through implementation of section 7 of the ESA in consultations with Federal agencies to ensure their proposed actions are not likely to destroy or adversely modify critical habitat. These economic impacts are discussed in further detail in the Section 4(b)(2) Report (NMFS 2015b) and the proposed rule of this action. Changes to Economic Impacts as a result of the change in area to Unit 2 are described below.

Six categories of activities were identified as likely to recur in the future and have the potential to affect the essential features:

1. Environmental Protection Agency (EPA) Clean Water Act permitting or management of pollution discharges through the NPDES programs in Unit 1;
2. United States Coast Guard (USCG) authorization or use of dispersants during an oil spill response in Unit 1;
3. U.S. Army Corps of Engineers (USACE) maintenance dredging or permitting of dredge and disposal activities under the Clean Water Act in Unit 2;
4. USACE permitting of marine construction, including shoreline restoration and artificial reef placement under the Rivers and Harbors Act and/or Clean Water Act in Unit 2;
5. The Maritime Administration's permitting of siting and construction of offshore liquefied natural gas facilities in Unit 1.

6. The Bureau of Ocean Energy Management's (BOEM's) permitting of sand extraction on the Outer Continental Shelf in Unit 2

As discussed in more detail in our ESA Section 4(b)(2) Report (NMFS 2015b), we determined that two of these federal actions, Water Quality/NPDES related actions and oil spill response activities implemented respectively by the EPA and the USCG, could result in incremental impacts from section 7 consultations related to the critical habitat.

Additionally, we identified four categories of activities that have not occurred in the critical habitat areas in the past but based on available information and discussions with action agencies, may occur in the future. If they do occur, these activities may adversely affect the essential features. These projected activities are: oil and gas exploration and development activities, directed copepod fisheries, offshore alternative energy development activities, and marine aquaculture. As with past or ongoing federal activities in the critical habitat areas, these four categories of projected future actions may trigger consultation because they have the potential to adversely affect both the essential features and the whales themselves. Three categories of future activities were judged as being likely to have incremental impacts due to the critical habitat: oil and gas exploration and development activities (Unit 1), directed copepod fishery (Unit 1), and offshore alternative or renewable energy activities (Unit 2). Consequently, costs of project modifications required through section 7 were considered to be incremental impacts of the designation.

As previously mentioned, we assumed that all future activities that may affect the essential features will require formal consultations. Based on analyses conducted by Industrial Economics, Inc. (Industrial Economics 2014), we project that each formal consultation will result in the following additional costs to address critical habitat impacts: \$1,400 in NMFS'

costs; \$1,600 in action agency costs; and \$880 in third party (*e.g.*, permittee) costs, if applicable. Administrative costs for the projected number of formal consultations representing incremental costs of the critical habitat designation were estimated in the proposed rule to total approximately \$82,296 per year. Based on the addition of 22 consultations that may occur as a result of the expanded Unit 2 area, the incremental administrative costs of the critical habitat designation are now expected to total approximately \$95,504 per year. As discussed in responses to comments, to evaluate and consider the economic impacts of including this area to Unit 2, we followed the same methodology described in the proposed rule (80 FR 9314, February 20, 2015) and in the Section 4(b)(2) Report (NMFS 2015b).

Based on our analysis of past consultation history, we project that over the next ten years, there will be 22 consultations, or about 2 consultations per year, in this area which may affect the features of critical habitat. Eleven of these projects are expected to involve dredging and/or disposal by the U.S. Army Corps of Engineers. Eleven projects are expected to involve permitting of marine construction or artificial reef placement by the U.S. Army Corps of Engineers. Thus, adding the southern extension is not expected to involve additional federal agency nor additional federal actions that are different from those that will be conducted in the rest of Unit 2. As discussed in the Section 4(b)(2) Report, these activities are only expected to involve incremental administrative costs of consultation, as a result of this designation. Annual administrative costs for these projected consultations is \$10,160 (at \$5,080 per consultation – see the Economics Impact section in the Notice of Proposed Rulemaking and the Section 4(b)(2) Report for background information on the costs for conducting consultations).

Relative to projected, new activities, offshore renewable/alternative energy may occur in the southern extension area, given its proximity to shore and available information about where

and how these activities might be implemented (www.boem.gov/Florida/). Because there are no records in our consultation history for offshore renewable or alternative energy projects occurring within Unit 2, we are unable to a) predict how many section 7 consultations may result from projects of this type over the next 10 years or b) calculate the projected incremental costs resulting from this action. We are not aware of any other future new federal activity that may be implemented in the southern extension area.

National Security Impacts

Previous critical habitat designations have recognized that impacts to national security result if a designation would trigger future ESA section 7 consultations because a proposed military activity “may affect” the physical or biological features essential to the listed species’ conservation. Anticipated interference with mission-essential training or testing or unit readiness, either through delays caused by the consultation process or through expected requirements to modify the action to prevent adverse modification of critical habitat, has been identified as a negative impact of critical habitat designations. (See, *e.g.*, Proposed Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover (71 FR 34571, June 15, 2006, at 34583); and Proposed Designation of Critical Habitat for Southern Resident Killer Whales (69 FR 75608, December 17, 2004, at 75633).)

Based on the past consultation history and information submitted by DOD for this analysis, it is unlikely that consultations with respect to DOD activities will be triggered as a result of the critical habitat designation.

In September 2009, and again in November 2010, we sent letters to DOD requesting information on national security impacts of the proposed critical habitat designation, and we received responses from the Navy, United States Marine Corps (USMC), USCG, Department of

Homeland Security (DHS), and the United States Air Force (USAF). We discuss the information contained within the responses thoroughly in the Section 4(b)(2) Report (NMFS 2015b).

Based on a review of the information provided by the Navy, USMC, and USCG, DHS, and USAF, and on our review of the activities conducted by these entities associated with national security within the specific areas designated as right whale critical habitat, their activities have no routes of potential adverse effects to the essential features and will not require consultation to prevent adverse effects to critical habitat (see Section 4(b)(2) Report, NMFS 2015b). Therefore, based on information available at this time, we do not anticipate there will be national security impacts associated with the critical habitat for the North Atlantic right whale.

Other Relevant Impacts

Other relevant impacts of critical habitat designations can include conservation benefits to the species and to society, and impacts to governmental and private entities. Our Section 4(b)(2) Report (NMFS 2015b) discusses conservation benefits of designating the two specific areas, and the benefits of conserving the right whale to society, in both ecological and economic metrics.

As discussed in the Section 4(b)(2) Report (NMFS 2015b) and summarized here, large whales, including the North Atlantic right whale, currently provide a range of benefits to society. Given the positive benefits of protecting the physical and biological features essential to the conservation of the right whale, this protection will in turn contribute to an increase in the benefits of this species to society in the future as the species recovers. While we can neither quantify nor monetize these benefits, we believe they are not negligible and would be an incremental benefit of this designation. However, although the features are essential to the conservation of right whales, critical habitat designation alone will not bring about the recovery

of the species. The benefits of conserving right whales are, and will continue to be, the result of several laws and regulations.

We identified in the Section 4(b)(2) Report (NMFS 2015b) both consumptive (*e.g.*, commercial and recreational fishing) and non-consumptive (*e.g.*, wildlife viewing) activities that occur in the critical habitat area. Commercial and recreational fishing are components of the economy related to the ecosystem services provided by the resources within the right whale critical habitat areas. The essential features provide for abundant fish species diversity. Commercial fishing is the largest revenue generating activity occurring within the critical habitat area, and protection of the essential features will contribute to sustaining this activity.

Further, the economic value of right whales can be estimated in part by such metrics as increased visitation and user enjoyment measured by the value of whale watching activities.

Education and awareness benefits stem from the critical habitat designation when non-federal government entities or members of the general public responsible for, or interested in, North Atlantic right whale conservation change their behavior or activities when they become aware of the designation and the importance of the critical habitat areas and features. Designation of critical habitat raises the public's awareness that there are special considerations that may need to be taken within the area. Similarly, state and local governments may be prompted to carry out programs to complement the critical habitat designation and benefit the North Atlantic right whale. Those programs would likely result in additional impacts of the designation. However, it is impossible to quantify the beneficial effects of the awareness gained or the secondary impacts from state and local programs resulting from the critical habitat designation

Exclusions Under Section 4(b)(2)

On the basis of our impacts analysis, we are not excluding any particular areas from the critical habitat designation. This has not changed since the proposed rule.

We have analyzed the economic, national security, and other relevant impacts of designating critical habitat. While we have utilized the best available information and an approach designed to avoid underestimating impacts, many of the potential impacts are speculative and may not occur in the future. Our conservative identification of potential incremental economic impacts indicates that any such impacts would be very small, resulting from very few (less than 18) federal section 7 consultations annually. Furthermore, the analysis indicates that there is no particular area within the areas designated as critical habitat where economic impacts would be particularly high or concentrated. No impacts to national security are expected. Other relevant impacts include conservation benefits of the designation, both to the species and to society. Because the features that form the basis of the critical habitat designation are essential to the conservation of North Atlantic right whales, the protection of critical habitat from destruction or adverse modification may at minimum prevent loss of the benefits currently provided by the species and may contribute to an increase in the benefits of these species to society in the future. While we can neither quantify nor monetize the benefits, we believe they are not negligible and would be an incremental benefit of this designation. Moreover, our analysis indicates that all potential future section 7 consultations on impacts to critical habitat features would also be conducted for the projects' potential impacts on the species, resulting in at least partial co-extensive impacts of the designation and the baseline listing of the species. Therefore, we have concluded that there is no basis to exclude any particular area from the critical habitat.

Final Determinations and Critical Habitat Designation

We conclude that specific areas meet the definition of critical habitat, comprising approximately 29,763 nm² of marine habitat within the geographical area occupied by North Atlantic right whales at the time of its listing. The two units designated as critical habitat are in the Gulf of Maine and Georges Bank region (Unit 1) and in waters off the Southeast U.S coast (Unit 2).

Activities That May Be Affected

ESA section 4(b)(8) requires in any proposed or final regulation to designate or revise critical habitat an evaluation and brief description of those activities (whether public or private) that may adversely modify such habitat or that may be affected by such designation. A variety of activities may affect the critical habitat and may be subject to the ESA section 7 consultation process when carried out, funded, or authorized by a Federal agency. As indicated above and in the Section 4(b)(2) Report, activities (3) through (6) and (9) are only predicted to result in incremental administrative costs of consultation. As discussed previously, the activities most likely to be affected by this critical habitat designation are: (1) Water Quality/NPDES permitting and regulatory activities (Unit 1), (2) Oil Spill Response (Unit 1), (3) Maintenance Dredging and Disposal or Dredging (Unit 2), (4) Construction Permitting (Unit 2), (5) Offshore Liquid Natural Gas Facilities (Unit 1), (6) Oil and Gas Exploration and Development (Unit 1), (7) Offshore alternative energy development activities (Unit 2), (8) Directed copepod fisheries (Unit 1), and (9) Marine aquaculture (Unit 2). Private entities may also be affected by this critical habitat designation if a Federal permit is required, Federal funding is received, or the entity is involved in or receives benefits from a Federal project. These activities will need to be evaluated with respect to their potential to destroy or adversely modify critical habitat. Changes to the actions to avoid destruction or adverse modification of critical habitat may result in changes to some

activities. Please see the ESA Section 4(b)(2) Report (NMFS 2015b) for more details and examples of changes that may need to occur in order for activities to avoid destruction or adverse modification of designated critical habitat. Questions regarding whether specific activities will constitute destruction or adverse modification of critical habitat should be directed to NMFS (see **ADDRESSES** and **FOR FURTHER INFORMATION CONTACT**).

Classification

Regulatory Planning and Review (E.O. 12866)

This rule has been determined to be “not significant” under Executive Order (E.O.) 12866.

National Environmental Policy Act

An environmental analysis as provided for under the National Environmental Policy Act (NEPA) for critical habitat designations made pursuant to the ESA is not required. See *Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied, 116 S.Ct. 698 (1996).

Regulatory Flexibility Act

We prepared a Final Regulatory Flexibility Analysis (FRFA) pursuant to section 604 of the Regulatory Flexibility Act (5 U.S.C. 601, *et seq.*). The FRFA is found in Appendix B of the ESA Section 4(b)(2) Report and is available upon request (see **ADDRESSES**). A summary of the analysis follows.

This rule is needed in order to comply with the ESA’s requirement to designate critical habitat to the maximum extent prudent and determinable when species are listed as threatened or endangered, and to respond to a petition to revise critical habitat for right whales in the North Atlantic. The objectives of this action are to help conserve endangered North Atlantic right whales by identifying critical habitat areas, consistent with the best available scientific

information, that contain the physical and biological features essential to the conservation of the species and which may require special management considerations or protection. Once designated, this critical habitat can be protected through the ESA section 7 consultation process in which NMFS and federal action agencies review the effects of federal actions on the survival and recovery of North Atlantic right whales.

Along with the proposed rule, the Initial Regulatory Flexibility Analysis (IRFA) was published for public comment. None of the public comments received focused specifically on the IRFA, which was presented in the draft Section 4(b)(2) Report. However, one comment expressed concern that we did not evaluate the potential economic impact of the proposed designation on ferry operators, the majority of whom are classified as small business or entities according to the commenter. We did not identify the coastal ferry services as a small business that might be impacted by this rule, because we concluded that transiting vessels, whether military, civilian, or commercial do not impact the essential foraging features of critical habitat. As a result, there will be no impact to the operation of ferries as a result of the designation of critical habitat and, as such, no impacts to small business entities. We did not amend the rule or our analysis as a result of this comment (see response to comment 64).

Prior to the publication of the proposed rule and the Initial Regulatory Flexibility Analysis (IRFA), the Chief Counsel of the Small Business Administration (SBA) provided several comments concerning the analysis that relate to small entities and the impacts to these entities. The SBA stated that the Regulatory Flexibility Act requires an IRFA to identify the number and type of small businesses that may be affected. Because the potentially affected industries were identified, SBA recommended that NMFS research whether Census information may be available that would aid in identifying the number of small businesses as well as the

impact the estimated costs could have on their yearly income and revenue. To address this comment, we solicited public comments through the proposed rule on all aspects of the proposed action including impacts to small businesses. We also directly consulted with the members of the Atlantic Large Take Reduction Team (ALWTRT), which includes industry representatives. However, no new information became available to alter our analysis, and no additional comments were received. In addition, the available Census data were not informative such that we could further refine our analysis of the number and type of small entities that may be affected by this rule.

SBA also stated that there did not appear to be any basis for concluding in our IRFA that potential project modifications that may be required to avoid adverse modification of critical habitat are unit costs such that total project modification costs would be proportional to the size of the project, and therefore it is not unreasonable to assume that larger entities would be involved in implementing the larger projects with proportionally larger project modification costs. SBA asked us to consider whether the modification costs are similar regardless of the size of the project, which could lead to proportionally larger costs for small projects than for larger projects. To respond in part to this comment, we noted that the particular statement referenced in the IRFA did not indicate an absolute conclusion, but instead indicated we were making what can be considered a ‘reasonable assumption.’ A more detailed response is presented in our FRFA.

Lastly, SBA asked how the agency came to the conclusion that the maximum, estimated, annualized, administrative cost to third parties of \$33,696 - some portion of which could be borne by small entities - won’t have a significant effect on small entities if we aren’t clear on the relative number of small entities that will be affected. To help address this question, we clarified

in the IRFA and the proposed rule that this amount represents the cost to NMFS, other federal agencies, and third parties, combined. The total estimated annualized cost to third parties is \$14,256, and the estimated cost for development of Biological Assessments (BA), which may be borne at least in part by third parties, is \$19,440. The maximum total the annualized administrative cost to third parties is thus \$33,696, some portion of which could be borne by small entities.

The critical habitat rule does not directly apply to any particular entity, small or large. The rule would operate in conjunction with ESA section 7(a)(2), which requires that federal agencies ensure, in consultation with NMFS, that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species or destroy or adversely modify critical habitat. Consultations may result in economic impacts to federal agencies and proponents of proposed actions. Those economic impacts may be in the form of administrative costs of participating in a section 7 consultation and, if the consultation results in required measures to protect critical habitat, project modification costs. As discussed in the Section 4(b)(2) Report, which serves as the basis for the FRFA and this summary, we determined that six types of federal actions that have occurred in the critical habitat areas in the past could result in incremental impacts from section 7 consultations related to the critical habitat. These activities are: Clean Water Act water quality/NPDES related actions implemented by the EPA; oil spill response actions by the USCG; dredging and spoil disposal implemented or permitted by the USACE; marine construction permitting by the USACE, including restoration and artificial reef placement; offshore energy regulation by BOEM; and authorization of sand extraction on the Outer Continental Shelf by BOEM. We project that 188 actions in these categories will be implemented over the next 10 years. However, we also determined that these activities would

not require consultation solely due to impacts to critical habitat. Instead, these activities would require consultation due to impacts to the whale themselves, even in the absence of designated critical habitat. Additionally, we identified four categories of activities that have not occurred in the critical habitat areas in the past but, based on available information and discussions with action agencies, may occur in the future. If they do occur, these activities may adversely affect the essential features. These projected activities are: oil and gas exploration and development activities, directed copepod fisheries, offshore alternative energy development activities, and marine aquaculture. As with past or ongoing federal activities in the critical habitat areas, these four categories of projected future actions may trigger consultation because they have the potential to adversely affect both the essential features and the whales themselves. However, we could not project the number of actions in these categories that would occur in the future, due to the lack of a consultation history or concrete plans by action agencies to implement these activities. Three categories of future activities were judged as being likely to have incremental impacts due to critical habitat impacts that would require project modifications to avoid these impacts, above and beyond any modifications required to address impacts to the whales: oil and gas exploration and development activities (Unit 1), directed copepod fishery (Unit 1), and offshore alternative or renewable energy activities (Unit 2). Consequently, costs of project modifications required through section 7 were considered to be incremental impacts of the designation.

We applied the conservative assumption that all future activities that may affect the essential features will require formal consultations. Based on analyses conducted by Industrial Economics, Inc. (Industrial Economics 2014), we project that each formal consultation will result in the following additional costs to address critical habitat impacts: \$1,400 in NMFS'

costs; \$1,600 in action agency costs; and \$880 in third party (*e.g.*, permittee) costs, if applicable. Administrative costs for the projected number of formal consultations representing incremental costs of the critical habitat designation were estimated in the proposed rule to total approximately \$82,296 per year. Based on the addition of 22 consultations that may occur as a result of the expanded Unit 2 area, the incremental administrative costs of the critical habitat designation are now expected to total approximately \$95,504 per year. The rule, implemented through ESA section 7(a)(2) consultations, may indirectly affect small businesses, small nonprofit organizations, and small governmental jurisdictions that engage in the 10 categories of activities listed above, through accrual of administrative costs (\$880 per action). Small entities that engage in water quality/NPDES related actions, oil spill response activities, oil and gas exploration and development activities, directed copepod fisheries, offshore alternative energy development activities, and marine aquaculture activities authorized or funded by a federal agency that may affect the essential features could also incur costs in the way of project modifications necessary to avoid destroying or adversely modifying critical habitat. As we discuss in the Section 4(b)(2) report (NMFS 2015b), it is not possible for us to estimate what these costs might be, individually or collectively. The rule may also indirectly benefit small entities that benefit from or strive for the protection of the essential features, such as fishing operations and whale watch companies.

We do know from the consultation record that applicants for federal permits or funds have included small entities. However, our consultation tracking database does not track the identity of past permit recipients or whether the recipients were small entities; therefore, it does not provide a basis to estimate the number of small businesses that may be indirectly affected by this rule. It is also difficult to estimate the number of small entities that may be affected

indirectly by this rule due to a lack of specific information regarding the nature, scope, and timing of future projects that would undergo section 7 consultations.

Within Unit 1, the Gulf of Maine-Georges Bank Region, virtually all current fishing operations in the eastern U.S. are small businesses. We have determined that there were 483 dealers and 8,094 fishing vessels in 2014 that meet the definition of small business entities. These numbers provide an estimate of the total number of vessels and fish dealers engaged in the harvest of seafood within Unit 1 that may benefit from this rule.

With regard to a potential copepod fishery, this rule could affect small businesses if fishermen choose to prosecute a copepod fishery in the future as virtually all fishing interests in Unit 1 are considered small businesses under the SBA small business entity size standards. Currently, there are no proposals to conduct a copepod fishery within Unit 1; nor have there been any in the past. Therefore, we have no basis to estimate the number of vessels that would be classified as small business entities in a copepod fishery.

Other small business entities include the approximately 55-70 whale-watching companies that operate within Unit 1. Neither current fishing operations nor whale watching companies would be negatively affected by this action as their activities were not identified as having the potential to affect the features. There is the potential for some unquantifiable positive benefit to accrue to these small businesses as a result of the preservation and maintenance of the ecosystem benefits associated with the essential foraging features.

In Unit 1, another potentially impacted group of small entities is small municipalities. A review of the consultation history indicates that we have consulted with the EPA on small governmental jurisdictions' (population less than or equal to 50,000) municipal wastewater discharges adjacent to the area under consideration for designation as critical habitat. Based on

our review of past consultation history, we are projecting a total of 21 consultations over the next 10 years involving primarily small municipalities and NPDES/Water Quality activities. Of the states bordering Unit 1, EPA administers the discharge permit program only in Massachusetts and New Hampshire; therefore, consultations with EPA would be required for municipal discharges only from those two states. Thus, the number of small municipalities that might be impacted would be equal to or less than the 21 predicted to be involved in consultations from all states bordering Unit 1, over the next 10 years.

We have determined that this rule will not likely have an impact on small business entities engaged in oil and gas exploration and development or have a disproportionate impact on them compared to large entities. Currently no specific or planned oil and gas exploration and development activities for this activity in Unit 1 as it is under an oil and gas exploration and development moratorium. Furthermore, business entities involved in offshore oil and gas exploration are generally large scale business entities as the technological capabilities to engage in offshore oil and gas development require large amounts of capital for these types of endeavors.

We have also determined this rule will not have any impact on small business entities engaged in oil spill response activities related to the at-sea use of oil dispersants. The SBA small business entity size standards for environmental remediation services establish an employee threshold of 500 individuals or less as a small business entity. Entities that are involved in offshore emergency oil spill response are generally either governmental agencies and/or large scale business entities. For example, the USCG is responsible for implementing the Oil Pollution Act including emergency oil spill responses responding to oil spills. The type of platform assets (*e.g.*, aerial, vessel) and technological capabilities necessary to respond to an oil

spill in the marine involvement, specifically the application of oil dispersants, require large amounts of capital for these types of endeavors.

In Unit 2, the Southeastern calving habitat, the only category of activity that might potentially impact small entities through requirements and costs of project modifications necessary to avoid destroying or adversely modifying critical habitat is offshore energy development (*e.g.*, wind energy farms). Because there is no past consultation history or any specific or planned federal proposals for wind energy facilities in Unit 2, we are unable to estimate the number of potential projects in this category that may require consultation due to critical habitat impacts over the next 10 years. Therefore, we have no basis to estimate the number of small entities that might be involved.

It is unclear whether small entities would be placed at a competitive disadvantage compared to large entities as a result of this rule. Because the costs of many potential project modifications that may be required to avoid adverse effects to the essential features of critical habitat are unit costs such that total project modification costs would be proportional to the size of the project, it is not unreasonable to assume that larger entities would be involved in implementing the larger projects with proportionally larger project modification costs. In addition, though it is not possible to determine the exact cost of any given project modification resulting from consultation, the smaller projects most likely to be undertaken by small entities would likely result in relatively small modification costs. Finally, many of the modifications identified to reduce the impact of a project on critical habitat may be a baseline requirement either due to the ESA listing of the species or under another regulatory authority, notably the Clean Water Act.

There are no record-keeping or reporting requirements associated with the rule. Similarly, there are no other compliance requirements in the rule. There are no professional skills necessary for preparation of any report or record.

We considered the effect to small businesses throughout our analysis and, as stated above, there will be no significant economic impact to small businesses. We have thus not made any changes from the proposed rule that would minimize significant economic impacts on small entities. We expect many small entities to benefit from this rule. We also estimate the average per consultation administrative costs for third parties, some of which may be small entities, is approximately \$880. It is unlikely that the rule will significantly reduce profits or revenue for small businesses. Although it is not possible to determine the exact cost of any given project modification resulting from consultation, the smaller projects most likely to be undertaken by small entities would likely result in relatively small modification costs.

In the IRFA, we considered the alternative of not proposing new critical habitat for the North Atlantic right whale. We rejected this alternative because we determined designating critical habitat for the North Atlantic right whale listed in 2008 was prudent and determinable, and the ESA requires critical habitat designation at the time of listing in that circumstance. Also, new scientific information has become available since the 1994 designation that supports expansion of the foraging and calving habitat areas.

In the IRFA, we also analyzed the proposed rule's preferred alternative. This alternative, would have expanded calving habitat to the north and east compared to the 1994 designation, but it would not have included a portion of the 1994 designation that extends approximately 27 nm south of Cape Canaveral, FL. However, in response to public comments on our proposal, we reviewed the best available scientific information again. We rejected what we had called the

preferred alternative in the proposed rule, because we believe the available data show consistent and predictable presence of right whale mother-calf pairs in this southern area, during the months the habitat models predict presence of all the essential features. The features here may require special management considerations or protections for the same reasons as the rest of Unit 2 -- because of possible negative impacts from activities and events of offshore energy development, large-scale offshore aquaculture operations, and global climate change. These activities and their potential broad-scale impacts on the essential features are discussed in detail in the Biological Source Document (NMFS 2015). For these reasons, we agreed with the commenters that the southern boundary of the calving area critical habitat should be moved southward from where we proposed. We updated the economic impact analysis in the Section 4(b)(2) Report and FRFA to reflect this change.

Finally, in the IRFA we also considered an alternative in which the boundaries of both Unit 1 and Unit 2 would be expanded compared to the proposed rule's preferred alternative. Specifically, under the expanded alternative, Unit 1 would encompass additional right whale sightings within the Gulf of Maine-Georges Bank region (particularly inshore waters along the coasts of Maine, New Hampshire and Massachusetts) and it would be expanded south and east of the southern boundary of proposed Unit 1 (south and east of Cape Cod). The expanded alternative would also have extended Unit 2 boundaries south of Cape Canaveral, Florida, similar to the 1994 calving critical habitat. As discussed above, in response to public comments, we chose in the final rule to extend Unit 2 boundaries south of Cape Canaveral, Florida, as considered in this alternative. However, for Unit 1, we rejected this alternative to expand Unit 1 boundaries closer inshore in the Gulf of Maine-Georges Bank region and south and east of Cape Cod. We rejected the expansion of Unit 1 boundaries because, based on the best available

scientific information, we determined that the essential features of foraging habitat were not present in those areas. As discussed in our FRFA, we considered the nature and number of additional consultations that may be required to address impacts to critical habitat given the extended calving area. The addition of this area did not change our assessment of impacts to small entities.

Coastal Zone Management Act

We have determined that this action will have no reasonably foreseeable effects on the coastal uses and resources of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia and Florida. Upon publication of the proposed rule, these determinations were submitted for review by the responsible state agencies under section 307 of the Coastal Zone Management Act. No comments were received on this Coastal Zone Management Act determination.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain a new or revised collection of information. This rule would not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations.

Federalism (E.O. 13132)

Pursuant to the Executive Order on Federalism, E.O. 13132, we determined that this rule does not have significant Federalism effects and that a Federalism assessment is not required. However, in keeping with Department of Commerce policies and consistent with ESA regulations at 50 CFR 424.16(c) (1)(ii), we requested information from, and coordinated this critical habitat designation with, appropriate state resource agencies in Maine, New Hampshire,

Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and Florida.

Energy Supply, Distribution, and Use (E.O. 13211)

On May 18, 2001, the President issued an Executive Order on regulations that significantly affect energy supply, distribution, and use. E.O. 13211 requires agencies to prepare Statements of Energy Effects when undertaking an action expected to lead to the promulgation of a final rule or regulation that is a significant regulatory action under E.O. 12866 and is likely to have a significant adverse effect on the supply, distribution, or use of energy. We have considered the potential impacts of this action on the supply, distribution, or use of energy. The critical habitat designation will not affect the distribution or use of energy and would not affect supply. This rule will not have a significant adverse effect on the supply, distribution, or use of energy. Therefore, we have not prepared a Statement of Energy Effects. The rationale for this is discussed in the proposed rule (80 FR 9314) and Section 4(b)(2) Report (NMFS 2015b).

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act, NMFS makes the following findings:

(A) This final rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, Tribal governments, or the private sector and includes both "Federal intergovernmental mandates" and "Federal private sector mandates." These terms are defined in 2 U.S.C. 658(5)-(7). "Federal intergovernmental mandate" includes a regulation that "would impose an enforceable duty upon State, local, or Tribal governments" with two exceptions. It excludes "a condition of Federal assistance." It also excludes "a duty arising from participation in a voluntary

Federal program," unless the regulation "relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and Tribal governments under entitlement authority," if the provision would "increase the stringency of conditions of assistance" or "place caps upon, or otherwise decrease, the Federal government's responsibility to provide funding" and the State, local, or Tribal governments "lack authority" to adjust accordingly. "Federal private sector mandate" includes a regulation that "would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance; or (ii) a duty arising from participation in a voluntary Federal program." The designation of critical habitat does not impose an enforceable duty on non-Federal government entities or private parties. The only regulatory effect of a critical habitat designation is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under ESA section 7. Non-Federal entities that receive funding, assistance, or permits from Federal agencies, or otherwise require approval or authorization from a Federal agency for an action may be indirectly affected by the designation of critical habitat. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed previously to State governments.

(B) We do not anticipate that this final rule will significantly or uniquely affect small governments. As such, a Small Government Agency Plan is not required.

Takings (E.O. 12630)

Under E.O. 12630, Federal agencies must consider the effects of their actions on constitutionally protected private property rights and avoid unnecessary takings of property. A

taking of property includes actions that result in physical invasion or occupancy of private property, and regulations imposed on private property that substantially affect its value or use. In accordance with E.O. 12630, this rule would not have significant takings implications. A takings implication assessment is not required. The designation of critical habitat in the marine environment does not affect private property, and it affects only Federal agency actions.

References

A complete list of all references cited in this rulemaking can be found on our Web site at www.greateratlantic.fisheries.noaa.gov/ and is available upon request from the NMFS Greater Atlantic Regional Office in Gloucester, Massachusetts (see **ADDRESSES**).

List of Subjects in 50 CFR Part 226

Endangered and threatened species.

Dated: January 21, 2016.

Eileen Sobeck,

Assistant Administrator for Fisheries,

National Marine Fisheries Service.

For the reasons set out in the preamble, we amend 50 CFR part 226 as follows:

PART 226—DESIGNATED CRITICAL HABITAT

1. The authority citation for part 226 continues to read as follows:

Authority: 16 U.S.C. 1533.

2. Revise § 226.203 to read as follows:

§ 226.203 Critical habitat for North Atlantic right whales (*Eubalaena glacialis*).

Critical habitat is designated for North Atlantic right whales as described in this section. The textual descriptions in paragraph (b) of this section are the definitive source for determining the critical habitat boundaries. The maps of the critical habitat units provided in paragraph (c) of this section are for illustrative purposes only.

(a) Physical and biological features essential to the conservation of endangered North Atlantic right whales.

(1) *Unit 1.* The physical and biological features essential to the conservation of the North Atlantic right whale, which provide foraging area functions in Unit 1 are: the physical oceanographic conditions and structures of the Gulf of Maine and Georges Bank region that combine to distribute and aggregate *C. finmarchicus* for right whale foraging, namely prevailing currents and circulation patterns, bathymetric features (basins, banks, and channels), oceanic fronts, density gradients, and temperature regimes; low flow velocities in Jordan, Wilkinson, and Georges Basins that allow diapausing *C. finmarchicus* to aggregate passively below the convective layer so that the copepods are retained in the basins; late stage *C. finmarchicus* in dense aggregations in the Gulf of Maine and Georges Bank region; and diapausing *C. finmarchicus* in aggregations in the Gulf of Maine and Georges Bank region.

(2) *Unit 2.* The physical features essential to the conservation of the North Atlantic right whale, which provide calving area functions in Unit 2, are:

- (i) Sea surface conditions associated with Force 4 or less on the Beaufort Scale,
- (ii) Sea surface temperatures of 7°C to 17°C, and

(iii) Water depths of 6 to 28 meters, where these features simultaneously co-occur over contiguous areas of at least 231 nmi² of ocean waters during the months of November through April. When these features are available, they are selected by right whale cows and calves in dynamic combinations that are suitable for calving, nursing, and rearing, and which vary, within the ranges specified, depending on factors such as weather and age of the calves.

(b) *Critical habitat boundaries.* Critical habitat includes two areas (Units) located in the Gulf of Maine and Georges Bank Region (Unit 1) and off the coast of North Carolina, South Carolina, Georgia and Florida (Unit 2).

(1) *Unit 1.* The specific area on which are found the physical and biological features essential to the conservation of the North Atlantic right whale include all waters, seaward of the boundary delineated by the line connecting the geographic coordinates and landmarks identified herein:

- (i) The southern tip of Nauset Beach (Cape Cod) (41° 38.39' N/69° 57.32' W).
- (ii) From this point, southwesterly to 41° 37.19' N/69° 59.11' W.
- (iii) From this point, southward along the eastern shore of South Monomoy Island to 41° 32.76' N/69° 59.73' W.
- (iv) From this point, southeasterly to 40° 50' N/69° 12' W.
- (v) From this point, east to 40° 50' N 68° 50' W.
- (vi) From this point, northeasterly to 42° 00' N 67° 55' W.
- (vii) From this point, east to 42° 00' N 67° 30' W.
- (viii) From this point, northeast to the intersection of the U.S.-Canada maritime boundary and 42° 10' N.

(ix) From this point, following the U.S.-Canada maritime boundary north to the intersection of 44° 49.727' N/66° 57.952' W; From this point, moving southwest along the coast of Maine, the specific area is located seaward of the line connecting the following points:

Latitude	Longitude
44° 49.727' N	66° 57.952' W
44° 49.67' N	66° 57.77' W
44° 48.64' N	66° 56.43' W
44° 47.36' N	66° 59.25' W
44° 45.51' N	67° 2.87' W
44° 37.7' N	67° 9.75' W
44° 27.77' N	67° 32.86' W
44° 25.74' N	67° 38.39' W
44° 21.66' N	67° 51.78' W
44° 19.08' N	68° 2.05' W
44° 13.55' N	68° 10.71' W
44° 8.36' N	68° 14.75' W
43° 59.36' N	68° 37.95' W
43° 59.83' N	68° 50.06' W
43° 56.72' N	69° 4.89' W
43° 50.28' N	69° 18.86' W
43° 48.96' N	69° 31.15' W
43° 43.64' N	69° 37.58' W
43° 41.44' N	69° 45.27' W
43° 36.04' N	70° 3.98' W
43° 31.94' N	70° 8.68' W
43° 27.63' N	70° 17.48' W
43° 20.23' N	70° 23.64' W
43° 4.06' N	70° 36.70' W
43° 2.93' N	70° 41.47' W

(x) From this point (43° 2.93' N /70° 41.47' W) on the coast of New Hampshire south of Portsmouth, the boundary of the specific area follows the coastline southward along the coasts of New Hampshire and Massachusetts along Cape Cod to Provincetown southward along the eastern edge of Cape Cod to the southern tip of Nauset Beach (Cape Cod)(41° 38.39' N/69°

57.32' W) with the exception of the area landward of the lines drawn by connecting the following points:

42°59.986' N	70°44.654' W	TO	Rye Harbor
42°59.956' N	70°44.737' W		Rye Harbor
42°53.691' N	70°48.516' W	TO	Hampton Harbor
42°53.516' N	70°48.748' W		Hampton Harbor
42°49.136' N	70°48.242' W	TO	Newburyport Harbor
42°48.964' N	70°48.282' W		Newburyport Harbor
42°42.145' N	70°46.995' W	TO	Plum Island Sound
42°41.523' N	70°47.356' W		Plum Island Sound
42°40.266' N	70°43.838' W	TO	Essex Bay
42°39.778' N	70°43.142' W		Essex Bay
42°39.645' N	70°36.715' W	TO	Rockport Harbor
42°39.613' N	70°36.60' W		Rockport Harbor
42° 20.665' N	70° 57.205' W	TO	Boston Harbor
42° 20.009' N	70° 55.803' W		Boston Harbor
42° 19.548' N	70° 55.436' W	TO	Boston Harbor
42° 18.599' N	70° 52.961' W		Boston Harbor
42°15.203' N	70°46.324' W	TO	Cohasset Harbor
42°15.214' N	70°47.352' W		Cohasset Harbor
42°12.09' N	70°42.98' W	TO	Scituate Harbor
42°12.211' N	70°43.002' W		Scituate Harbor
42°09.724' N	70°42.378' W	TO	New Inlet
42°10.085' N	70°42.875' W		New Inlet
42°04.64' N	70°38.587' W	TO	Green Harbor
42°04.583' N	70°38.631' W		Green Harbor
41°59.686' N	70°37.948' W	TO	Duxbury Bay/Plymouth Harbor
41°58.75' N	70°39.052' W		Duxbury Bay/Plymouth Harbor
41°50.395' N	70°31.943' W	TO	Ellisville Harbor
41°50.369' N	70°32.145' W'		Ellisville Harbor
41°45.87' N	70°28.62' W	TO	Sandwich Harbor
41°45.75' N	70°28.40' W		Sandwich Harbor
41°44.93' N	70°25.74' W	TO	Scorton Harbor
41°44.90' N	70°25.60' W		Scorton Harbor
41°44.00' N	70°17.50' W	TO	Barnstable Harbor
41°44.00' N	70°13.90' W		Barnstable Harbor
41°45.53' N	70°09.387' W	TO	Sesuit Harbor
41°45.523' N	70°09.307' W		Sesuit Harbor
41°45.546' N	70°07.39' W	TO	Quivett Creek
41°45.551' N	70°07.32' W		Quivett Creek
41°47.269' N	70°01.411' W	TO	Namskaket Creek
41°47.418' N	70°01.306' W		Namskaket Creek
41°47.961' N	70°0.561' W	TO	Rock Harbor Creek

41°48.07' N	70°0.514' W		Rock Harbor Creek
41°48.932' N	70°0.286' W	TO	Boat Meadow River
41°48.483' N	70°0.216' W		Boat Meadow River
41°48.777' N	70°0.317' W	TO	Herring River
41°48.983' N	70°0.196' W		Herring River
41°55.501' N	70°03.51' W	TO	Herring River, inside Wellfleet Harbor
41°55.322' N	70°03.191' W		Herring River, inside Wellfleet Harbor
41°53.922' N	70°01.333' W	TO	Blackfish Creek/Loagy Bay
41°54.497' N	70°01.182' W		Blackfish Creek/Loagy Bay
41°55.503' N	70°02.07' W	TO	Duck Creek
41°55.753' N	70°02.281' W		Duck Creek
41°59.481' N	70°04.779' W	TO	Pamet River
41°59.563' N	70°04.718' W		Pamet River
42°03.601' N	70°14.269' W	TO	Hatches Harbor
42°03.601' N	70°14.416' W		Hatches Harbor
41°48.708' N	69°56.319' W	TO	Nauset Harbor
41°48.554' N	69°56.238' W		Nauset Harbor
41°40.685' N	69°56.781' W	TO	Chatham Harbor
41°40.884' N	69°56.28' W		Chatham Harbor

(xi) In addition, the specific area does not include waters landward of the 72 COLREGS lines (33 CFR part 80) described below.

(A) *Portland Head, ME to Cape Ann, MA.*

(1) A line drawn from the northernmost extremity of Farm Point to Annisquam Harbor Light.

(2) [Reserved]

(B) *Cape Ann MA to Marblehead Neck, MA.*

(1) A line drawn from Gloucester Harbor Breakwater Light to the twin towers charted at latitude 42°35.1' N. longitude 70°41.6' W.

(2) A line drawn from the westernmost extremity of Gales Point to the easternmost extremity of House Island; thence to Bakers Island Light; thence to Marblehead Light.

(C) *Hull, MA to Race Point, MA.*

(1) A line drawn from Canal Breakwater Light 4 south to the shoreline.

(2) [Reserved]

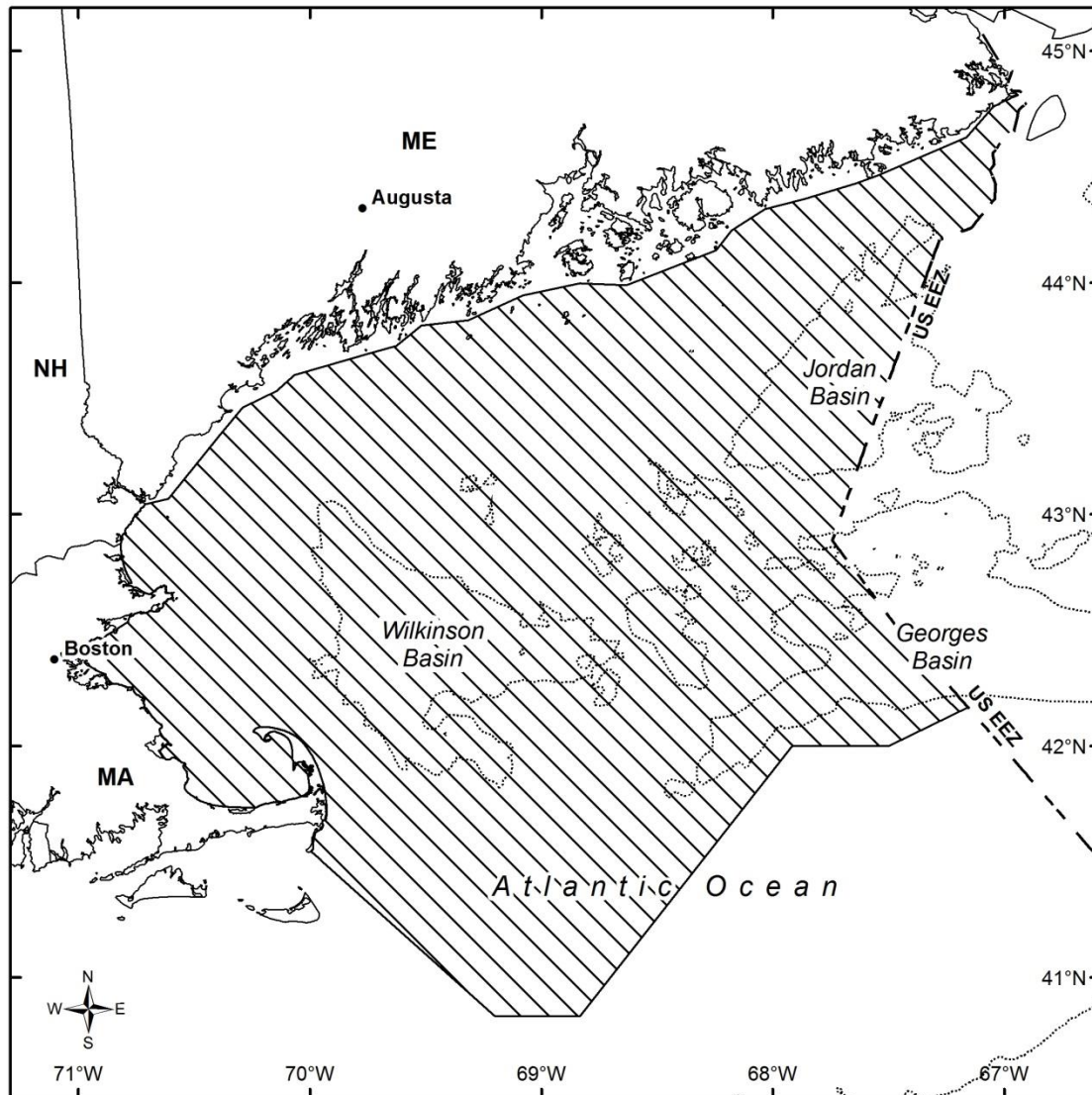
(2) *Unit 2*. Unit 2 includes marine waters from Cape Fear, North Carolina, southward to 28°N latitude (approximately 31 miles south of Cape Canaveral, Florida) within the area bounded on the west by the shoreline and the 72 COLREGS lines, and on the east by rhumb lines connecting the following points in the order stated from north to south.

Latitude	Longitude
33°51' N	at shoreline
33°42' N	77°43' W
33°37' N	77°47' W
33°28' N	78°33' W
32°59' N	78°50' W
32°17' N	79°53' W
31°31' N	80°33' W
30°43' N	80°49' W
30°30' N	81°01' W
29°45' N	81°01' W
29°15' N	80°55' W
29°08' N	80°51' W
28°50' N	80°39' W
28°38' N	80°30' W
28°28' N	80°26' W
28°24' N	80°27' W
28°21' N	80°31' W
28°16' N	80°31' W
28°11' N	80°33' W
28°00'	80°29' - W
28°00' N	At shoreline

(c) Overview maps of the designated critical habitat for the North Atlantic right whale follow.

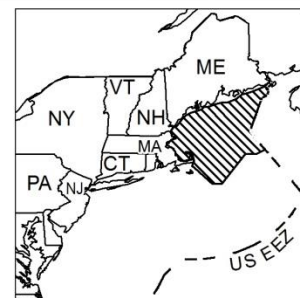
North Atlantic Right Whale Critical Habitat Northeastern U.S. Foraging Area

Unit 1



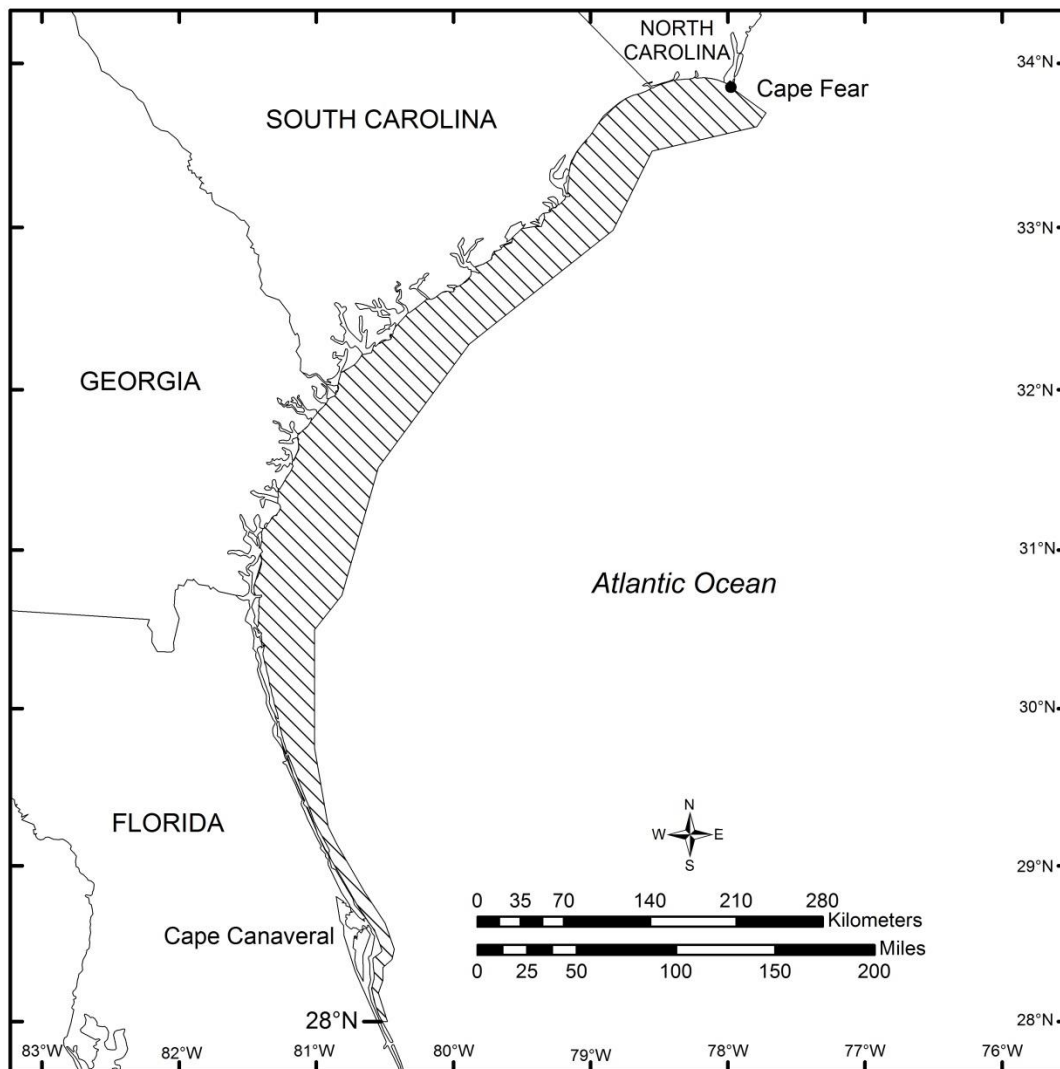
-  Critical Habitat
-  200m Depth Contour

This map is provided for illustrative purposes only of North Atlantic right whale critical habitat. For the precise legal definition of critical habitat, please refer to the narrative description.



North Atlantic Right Whale Critical Habitat Southeastern U.S. Calving Area

Unit 2



 **Critical Habitat**



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